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**YOU'RE NOT FORGOTTEN: EFFECTS OF SCREENING FOR POSTPARTUM
DEPRESSION WITHIN A PEDIATRIC SETTING**

by

MARRISA S. CULVER

EVIDENCE-BASED PRACTICE PROJECT REPORT

Submitted to the College of Nursing and Health Professions

of Valparaiso University,

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in partial fulfillment of the requirements

For the degree of

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2020

Student

Date

Advisor

Date

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DEDICATION

This project is dedicated to my loving family. To my incredible father, Albert Mitchell, who has provided me with endless support throughout my life and helped shaped me to be the person that I am today. You have encouraged me to push forward and motivated me to dream bigger than I could ever imagine. I am so thankful for your wisdom and the sacrifices you've made for our family. Raising five children after the devastating passing of mommy, you gave us each the individual love and care we needed to get through difficult times, happy times and monumental times. Your selflessness, hard work and dedication to our family do not go unnoticed, Daddy you have made me become a better person and I appreciate you being with me every step of the way. I love you dearly.

To my loving husband, thank you for your love, patience and your encouragement during this academic journey and throughout our marriage. You have been my rock since the beginning of our friendship. God truly designed us for one another and I'm so thankful I get to fall asleep to you every night and wake to you every morning. You are truly my best friend and I wouldn't want to spend my life with anyone else but you. Thank you for being an amazing, selfless and caring husband and father. I look forward to spending the rest of my life with you and growing as a family.

Lastly, to my late mother, Mae Frances, although you are not physically here with us today, I see you daily in my daughter Madalyn Frances. Thank you for your strength, love and passion for Christ. You instilled in me everything I needed to know to get through life except how to live without you, I miss you dearly and your legacy will forever live on. To all the women in the world who may be suffering from postpartum depression and feel that they may not have a voice or feel they have been forgotten, know that you are loved, and you are seen.

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ABSTRACT

Postpartum depression (PPD) is depression that occurs in women following childbirth occurring during the postpartum period and affects 1 in 7 women (The United States Preventive Services Task Force, 2019). The American Academy of Pediatrics [AAP] (2019), recommends that pediatric healthcare providers utilize their position to screen for PPD. The purpose of this evidence-based practice (EBP) project was to implement a PPD screening intervention within a pediatric healthcare setting using the Edinburgh Postnatal Depression Scale (EPDS). The Academic Center for Evidence-Based (ACE) Practice Star Model guided this EBP project with evidence-based interventions developed after a comprehensive literature search.

Implementation of the EBP project occurred in a pediatric office in northeast, Indiana in which eligible mothers were screened at their child's 1, 2, 4, and 6-month well-child visits. A total of 30 participants were screened for risk for PPD at their child's initial well-child visit and then 12 weeks later with a follow-up phone call. Interventions to increase awareness of PPD were delivered to participants based on their EPDS scores. Participants scoring greater than 10 were identified as highest risk for PPD and were provided with community resources, PPD educational information, and a referral to their obstetrician/gynecologist (OB/GYN), or primary care provider (PCP). Those who scored less than 10 received community resources and PPD educational information to review at their convenience. A 12-week follow-up phone call was conducted for all participants post-intervention. A paired-samples *t*-test indicated a significant decrease from pre-intervention EPDS total score was found $t(29) = 6.625, p < .001$. The mean of the pre-intervention EPDS score was 4.83 (4.65) and the mean of the pre-intervention OB/GYN or PCP follow-up was 2.67 (0.76). A significant decrease from the pre-intervention EPDS score to follow-up was found $t(29) = 2.259, p < 0.05$. A one-way between subjects' ANOVA was conducted to compare the effect of past medical history on EPDS total scores. There was a significant effect of past medical history on EPDS total scores at the $p < .05$ level for the three conditions $F(4, 25) = 3.121, p = 0.033$.

CHAPTER 1

INTRODUCTION

Background

According to the United States Preventive Services Task Force [USPSTF] (2019), postpartum depression (PPD) is depression that occurs in women after childbirth, it affects as many as 1 in 7 women and is the most common within the postpartum period. Symptoms for postpartum depression include “loss of interest and energy, expressed mood, fluctuations in sleep or eating patterns, reduced ability to think or concentrate, feelings of worthlessness, and recurrent suicidal ideation” (USPSTF, 2019, p. 1). These symptoms can have negative short and long-term effects not only for mothers but also for their children (USPSTF, 2019, p.1). Women who suffer from PPD exhibit significantly higher levels of negative and lower levels of positive behavior toward their child (i.e. praising or playing with their child), increase breastfeeding cessation, receive fewer preventive health services (i.e. vaccinations), and influence the child’s cognitive and emotional development with an increased risk for psychiatric disorders in their children (USPSTF, 2019).

The Centers for Disease Control and Prevention (CDC) identify potential risk factors that are associated with the development of postpartum depression. These risk factors include experiences that may affect mothers’ moods, for instance, “stressful life events, low social support, family history of depression, being a teen mom, mom of multiples, history of depression, preterm delivery, pregnancy complications, birth complications and having a baby that is hospitalized” (CDC, 2017). Although there are many risk factors that can increase the chances of developing postpartum depression, this condition can occur within a healthy pregnancy, or in women who experienced a normal birth and delivery of a healthy baby. While the CDC identifies social experiences that may alter women’s moods increasing their chances of having postpartum depression, the USPSTF identifies other contributing risk factors. Risk factors such as “low socioeconomic status, lack of support, genetic factors, history of physical or

sexual abuse, unplanned pregnancy, lack of financial support and gestational diabetes” (USPSTF, 2019, p.1). These risk factors help providers have a better understanding of their patients when screening for postpartum depression.

Postpartum depression screening is done using different tools with the most frequently reported being the Edinburgh Postnatal Depression Screening (EPDS), Personal Health Questionnaire 2 (PHQ-2) or Personal Health Questionnaire 9 (PHQ-9). These screening tools help determine how mothers have been coping with their feelings and provide healthcare providers with the information they need to properly assess their mental state.

Data from the Literature Supporting Need for the Project

According to the American Academy of Pediatrics [AAP] (2019), 10% of women suffer from depression during the postpartum period, but less than half of those cases are recognized. Therefore, a screening process for depression is needed to provide opportunities to improve outcomes for both mother and child. AAP (2019) recommends that pediatric health care providers are in a great position to screen mothers for postpartum depression due to the frequent visits that occur in the first year of life for their child. Since these providers are well-positioned to screen mothers for postpartum depression, AAP recommends integrating a screening process at the 1, 2, 4, and 6 months well-child visits. The USPSTF and Centers for Medicare and Medicaid Services (CMS) both support PPD screening and supports the recognition of screening as an evidence-based recommendation, whereas providers are able to close the gap in the rates of PPD screening. As of 2017, the AAP, USPSTF, and CMS recognize that PPD screenings measure the risk of the infant's environment, therefore billing for this type of screening conducted during office visits is appropriate. The Current Procedural Terminology (CPT) code for post-partum depression screening during well child encounters is 96161 “Administration of caregiver-focused health risk assessment instrument for the benefit of the patient, with scoring and documentation, per standardized instrument” (AAP, 2016, p.1).

Therefore, screening in a pediatric office is appropriate and the capability for billing and coding is indicated.

Data from the Clinical Agency Supporting Need for the Project

The proposed pediatric clinical site in Fort Wayne, IN currently does not screen for maternal depression in their office. Furthermore, providers are not consistent in their screening methods, documentation of the screening, and subsequently the education and/or referral process for those scoring at risk for PPD at this clinical setting. This site is a privately-owned medical clinic in which EBP is frequently integrated into practice by the primary medical provider. The primary medical provider was interested in implementing a maternal depression screening within his office as recommended by the AAP. Most pediatricians in the city of Fort Wayne, IN do not screen for postpartum depression (personal communication, medical director, April-June 2019). Many providers that do screen for postpartum depression have been practicing for years and have had someone implement the screening process within their practice for them or are personally interested in the screening process (personal communication, medical director, May 2019). The provider at the proposed project site was excited for the screenings to be integrated within his practice and was prepared to help in any way possible (personal communication, medical director, May 2019). Relationships between pediatrician providers and obstetricians (OB) is based on location. Some pediatrician providers are linked to the OBs offices and share electronic medical records. This proposed project site was not linked to OBs offices and does not share a similar electronic medical record as OB offices or hospitals.

The population presenting to this clinic for care is diverse including a variety of ethnic backgrounds including Caucasians, Hispanics, Asians and African Americans. There was Spanish speaking office staff available to assist with patients and their families that do not speak or interpret English well. The provider believes in holistic treatment and refers to natural products as much as possible (personal communication, medical director, May 2019). The

medical provider at this clinic approaches illnesses will natural safe supplements when necessary. The culture of the office is health first, promoting healthy eating and living (Jefferson Pediatrics PC, 2014). There is one nurse practitioner (NP) and two physician assistants (PAs) that conduct new well-child visits as well as the primary provider. Each provider adheres to the office culture of being natural and promoting holistic treatment (Jefferson Pediatrics PC, 2014).

Purpose of the Evidence-Based Practice Project

Evidence has demonstrated that maternal depression is prevalent among postpartum women and is not being recognized. According to the United Health Foundation and data retrieved from the CDC, there was no data reported for the state of Indiana related to the incidence of postpartum office visits for women following delivery (2019). Although there was no data reported for postpartum visits, the 2018 visits for the well-baby check was 93.1% (United Health Foundation, 2019). The pediatric setting has been identified as an avenue for captivating the maternal population during the postpartum period, who may otherwise not follow up with a provider, thus closing the gap in PPD screening. The purpose of this EBP project was to implement a postpartum depression screening intervention within a pediatric setting using a synthesis of current evidence by utilizing the EPDS screening tool to identify depression in postpartum women within the first year of their infant's life. By doing so this minimizes the future risk of undiagnosed depression within postpartum women and negative health consequences for their children. Hence, the compelling clinical question that initiated this EBP project was: What is the effect of screening women for postpartum depression within a pediatric setting? The aims of the project were to increase awareness and recognition of PPD in postpartum women up to one year after delivery, which ultimately reduces the rates of undiagnosed women.

PICOT Question

Specifically, this project will address the following PICOT question: "In postpartum women (P), how does the implementation of a screening and referral protocol (I) for postpartum

depression in a pediatric setting affect mental well-being (EPDS scores) (O), as, compared to the current practice (C) over a twelve-week period (T)?”.

Significance of the EBP Project

Postpartum depression is common, with potentially life-threatening effects on mother and babies during the first year of life. This EBP project seems well-timed since the recommendation of screening for PPD in a pediatric setting was reported in 2010 by the AAP. Being that maternal depression affects the whole family, it is essential that the gap is closed, screening rates increase, and pediatricians recognize the signs of postpartum depression given the frequent contact with parents of infants (AAP, 2019).

“PND (perinatal depression) peaks in women 18 to 44 years of age. In general, as many as 12% of all women who are pregnant or in the postpartum period experience depression in a given year, and 11% to 18% of women report postpartum depression symptoms. The prevalence in women with low income is estimated to be double at 25%”. “Minor depression peaks at 2 to 3 months postpartum, and the peak for major depression is at 6 weeks postpartum” while there is also another peak for depression at the 6-month period postpartum (Rafferty et al., 2019, p. 2).

These peaks of postpartum depression occur after OB visits, therefore the need for continued screening is indicated in a different setting such as a pediatric office.

This EBP project sought to provide additional profundity to the current evidence regarding maternal screening for PPD within a pediatric setting. The results may provide observable information for providers, patients, and office staff. Pediatrician offices may use the findings to revise policies, protocols, and assessments across different pediatrician offices and health care settings. The interventions were implemented to increase awareness of postpartum depression and close the gap of missed opportunities to address mothers at risk for postpartum depression. Protocols were established to aid providers to navigate and intervene based on screening results. This ensures consistency of screening across providers at the proposed

clinic. This protocol also included educational information including a list of resources and referral recommendations for mothers (see Appendix G). Results may be used by other advanced practice registered nurses (APRNs) to facilitate maternal care in a pediatric setting aiming to increase patient outcomes which ultimately impact family dynamics and family health as a whole.

CHAPTER 2

EVIDENCE-BASED PRACTICE MODEL AND REVIEW OF LITERATURE

Evidence-based Practice Model

Overview of EBP Model

The Academic Center for Evidence-Based Practice (ACE) Star Model was used to aid in guiding the development of this EBP project. The ACE Star Model was developed at the University of Texas Health Science Center in San Antonio. There are many challenges that present when transitioning research into practice, but the ACE Star Model has developed a pathway to overcoming these obstacles. "The ACE Star Model explains how to overcome the challenges of (1) the volume of research evidence, (2) the misfit between form and use of knowledge, and (3) integration of expertise and patient preference into best practice" (Melnyk & Fineout-Overholt, 2015, p.305). This model helps aid in the understanding of nature, cycles, and knowledge that are used in the different aspects of evidence-based practice. According to Stevens (2012), "the Star Model places nursing's previous scientific work within the context of EBP, serves as an organizer for examining and applying EBP, and mainstreams nursing into the formal network of EBP" (p. 1).

The ACE Star Model explains how various forms of knowledge are essential when transforming research into practice. For example, the inclusion of systematic reviews and clinical practice guidelines are forms of knowledge that can be used as supporting evidence to guide EBP initiatives. These various forms of knowledge move through several cycles which include a combination of knowledge and integration into practice. The model provides a systematic framework for integrating research into practice through five stages of knowledge transformation. These stages are (a) discovery research, (b) evidence summary, (c) translation to guidelines, (d) practice integration, and (e) process, outcome evaluation (Melnyk & Fineout-Overholt, 2015). Stevens (2012) states that knowledge transformation is "the conversion of

research findings from primary research results, through a series of stages and forms to impact on health outcomes by way of evidence-based care” (p. 1).

Application of EBP Model to DNP Project

Star point one (stage one) of the five-stage process is discovery research. Also known as the knowledge-generating stage. During this stage, it is essential to discover what the research indicates about the clinical burning question and how EBP projects are developed. For this EBP project, this stage included research that supported the lack of implementation of proper assessing/screening of postpartum depression and how it affects postpartum mothers. The project coordinator initially reviewed single studies that evaluated the effects of screening for postpartum depression. This led to the discovery that screening postpartum depression within a pediatric setting has not yet been widely implemented across the nation and is recommended as a best practice strategy. Although screening for postpartum depression in a pediatric setting is supported in the literature, not all pediatric offices are implementing this screening process. Thus, the decision to move forward in evaluating further studies regarding the implementation of screening postpartum women for postpartum depression within a pediatrician clinic emerged. Once the review of further supportive studies occurred, progression into the second stage of the ACE Star Model was deemed appropriate.

Star point two (stage two) of the five-stage process is an evidence summary. This is also considered a knowledge-generating stage, where “evidence summaries produce new knowledge by combining findings from all studies to identify bias and limit chance effects in the conclusions” (Stevens, 2012, p. 1). For this EBP project, the synthesis of literature essentially served as the evidence summary. The use of the critical appraisal of the evidence was used to determine what is high quality for use to guide the interventions. Common themes throughout the literature such as, type of tool, referral process and incorporation within the practice were described. This high-quality evidence guided this EBP project by providing the best interventions and recommendations.

The translation is the star point three (stage three) of the five- stage process. This stage actually encompasses two stages, translating evidence into a practice recommendation and integration into practice. Essentially, this can be defined as taking the evidence and combining it with clinical expertise to implement it into practice. As for this EBP project, there are clinical guidelines as well as single research studies being used to support the recommendation. The clinical guidelines on implementing postpartum screening within a pediatric setting have been developed by the AAP and Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) which were used to guide this EBP project. Stevens (2012) states "summarized research evidence is interpreted and combined with other sources of knowledge and then contextualized to a specific client population and setting" (p. 1). For this EBP project, the best practice model indicates the targeted population should be postpartum women attending well-child visits within a pediatric setting.

The fourth point in the five-stage process is, practice integration, which is considered "the most familiar stage in healthcare because of society's long-standing expectation that healthcare is based on the most current knowledge, thus, requiring the implementation of innovations" (Stevens, 2012, p. 1). This current knowledge once implemented into practice is considered best practice. Relating to this EBP project, the project coordinator facilitated this stage by ensuring proper education supporting the need for the project was provided to office personnel. For success during this stage, it was essential that the staff and providers bought-in and understood the importance of screening and its impact on the child's health. Furthermore, project recruitment and participation included clear and purposefully detailed information to eligible postpartum women highlighting the importance of screening for postpartum depression. Interventions were carefully planned so as not to disturb the normal workflow of the office or staff within the pediatric project site.

The last stage (stage five) of the ACE Star Model is evaluation, which includes process and outcomes. This stage "is an inclusive view of the impact that the EBP has on patient health

outcomes, satisfaction, efficacy and efficiency of care, and health policy” (Melnyk & Fineout-Overholt, 2015, p. 306). According to Stevens (2012), “the final outcome is evidence-based quality improvement of health care” (p.1). As knowledge is transformed through each of the five stages of the ACE Star Model the final outcome of this EBP project was focused on the health of postpartum women and their infants by increasing proper screening for postpartum depression. The purpose of this screening strategy within a pediatric setting was to identify PPD in women who may have been missed if not screened appropriately during their obstetric visits or neglected to follow up with a provider during their postpartum period.

Strengths and Limitations of EBP Model for DNP Project

The strengths of the ACE Star Model for this EBP project included its ease of use and capability to transition through the five stages. This model aided in the organization and interpretation of relevant information to be applicable within the healthcare system. A strength the model had was increasing the understanding of the science of EBP. Understanding the science of EBP and how clinical practice guidelines can initiate the application of research into practice was a key component of this EBP project, which was emphasized in one of the stages of the ACE Star Model. The uniqueness of the ACE Star Model's aim was to create new knowledge, while this EBP project aim was to create new knowledge based on the outcomes of postpartum depression screening within a pediatric setting.

There were some limitations of this model, including that the stages of the model were intended to be progressed through in a chronological sequence. The model does not appear to have a linear effect, rather a circular model, which indicates that the project leader would start over or repeat the cycle. The model does not appear to have an ending. When using it for implementing new knowledge into a healthcare facility, having an understanding of an end is prudent.

Literature Search

Sources Examined for Relevant Evidence

A search was completed for relevant evidence to identify the benefits of screening for PPD within a pediatric setting. The databases that were examined include the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Joanna Briggs Institute (JBI), Cochrane Library, ProQuest Nursing and Allied Health Source, PsycINFO, and Medline. Support from the Valparaiso University health sciences librarian was utilized to narrow and focus key terms based on databases searched. The MeSH (medical subject heading) system and Boolean system were used in order to keep consistency throughout the different databases. Initial key terms used within the literature search prior to coordinating with the librarian included postpartum depression, postnatal depression, PPD, pediatrician, pediatrics, pediatrician offices, well child visits (WCV). After collaborating with the librarian, the use of MeSH terms and Boolean operators were utilized for a more advanced literature search. The best combination of phrases and key terms included “postpartum depression” OR “postnatal depression” AND pediatric* OR “pediatrician office” OR “well-child visit*”. Abstracts were reviewed that contained these key terms or phrases.

Abstracts were considered for inclusion as supporting evidence for this project if they were (a) written in English, (b) peer-reviewed, and (c) published within the last five years (between 2014 to 2019). Exclusion criteria for abstracts included (a) those abstracts that were conducted outside of the United States, (b) published in different languages (non-English), (c) the interventions were not implemented in a pediatric setting, (d) the abstract provided background information regarding postpartum depression, knowledge, or attitudes toward and definitions, and (e) articles that included a prenatal depression screening. These abstracts were eliminated due to the lack of support and applicability to the population of interest.

After a complete review of the abstracts and elimination of duplicate citations from the searched databases, a total of 14 articles were considered appropriate for the development of

the EBP project (see Table 2.1). After the systematic search was completed within each database, retrieval of the supportive articles of evidence was completed. CINAHL yielded 47 results with nine articles deemed relevant to the EBP project. Of these nine articles, there was a policy statement from the AAP as well as a position JBI database search included simple search phrases such as “postpartum depression” OR “postnatal depression” and resulted in 38 articles while only one was relevant to the EBP project. The Cochrane Library database search utilizing the simple search terms postpartum depression” OR “postnatal depression” yielded 34 results with none being relevant to the EBP project. The search within Medline via EBSCO utilized MeSH terms combined with Boolean operators (MM’ Postpartum Depression) AND pediatric* OR “pediatrician office” OR “well-child visit**” yielded 103 results and after elimination of duplicate citations, resulted in one relevant article. Replication of the search terms used within Medline yielded two articles from the ProQuest database both of which were relevant and met inclusion criteria. The same search, utilizing the MeSH terms and Boolean operators within PsycINFO yielded 47 articles and after elimination of duplications, one article was included for the EBP project. Five chased citations lead to one pilot study within the *Journal of Clinical Pediatrics* that was deemed relevant to the EBP project.

Levels of Evidence

After the selection of the fourteen articles, it was essential to appropriately evaluate each piece of evidence to ensure these articles were relevant and of good quality for the EBP project. The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Research Evidence Appraisal Tool was utilized to evaluate each piece of evidence retrieved for use in the development of this EBP project. Within this tool, each piece of evidence was identified by the type of study design and appraised using a structured set of questions that assist with rating the research pieces evidence according to level (I-V) and quality (A-C). Level I includes experimental study, randomized controlled trials (RCTs), explanatory mixed-method design that includes only a level I quantitative study and systematic review of RCTs with or without meta-analysis. Within this

EBP project, a perspective cohort study was utilized as level I. Level II includes quasi-experimental study, explanatory mixed-method design that includes a level II quantitative study, systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis. This EBP project yielded three level II articles which included quasi-experimental, pilot study and systematic review. Level III includes nonexperimental study, systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis, exploratory, convergent, or multiphasic mixed methods studies, explanatory mixed method design that includes only a level III quantitative study, qualitative study, and meta-synthesis. An appraisal of evidence was utilized as level III within this EBP project. Level IV evidence levels include an opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence, including clinical practice guidelines, consensus panels/position statements. Two recommendation/position statements were used as level IV articles in the development of this EBP project. Level V evidence includes evidence-based on experiential and nonresearched evidence, including integrative reviews, literature reviews, quality improvement, program or financial evaluation, case reports and opinion of nationally recognized experts based on experiential evidence. The level V articles utilized for this EBP project included three literature reviews, an evidence summary and three quality improvement articles.

Appraisal of Relevant Evidence

The JHNEBP Research Evidence Appraisal Tool is designed to lay the foundation “for understanding the importance of implementing EBP in a transformed healthcare environment, emphasizing the necessity for continuous quality improvement and cost-effectiveness” (Dearholt & Dang, 2017, p.xxi). The appraisal tool includes a set of questions for each type of evidence retrieved that determines the type, quality, and level of each piece of evidence that is appraised.

Within this tool, there are evidence rating levels ranging from Level I (highest) to Level V (lowest) that are assigned to the pieces of the evidence appraised. Within each level, there is also a rating for the individual pieces of evidence categorized as A (high quality), B (good quality) or C (low quality/major flaws). The final articles chosen for the EBP project have a variety of leveling and quality ratings which helps support the PICOT question and purpose of this project. Having lower-rated articles such as can indicate that there was a small sample size or that the study was considered a quality improvement project rather than research. Although there were some low-quality articles included within the final supportive evidence guiding this EBP project, this does not imply that they were not beneficial to project implementation and achieving desired outcomes. These articles provided a great foundation for the project purpose and diversify the evidence provided. The final literature appraisal included fourteen pieces of evidence: four-level I (1-prospect cohort, 1-evidence summary & 2- systematic reviews), two-level II (quasi-experimental study & pilot study), two-level IV (2- clinical guidelines) and six-level V (3- literature reviews & 3- quality improvements) (See Table 2.2). The level of evidence was determined using the JHNEBP Research Evidence Appraisal Tool and organized in an evidence summary table in Appendix A.

Table 2.1

Evidence Search Table

Database	Results	Duplicates Articles	Abstracts Reviewed	Articles Appraised
CINAHL	47	0	15	9
JB	38	0	1	1
Cochrane	34	5	1	0
MEDLINE	103	15	1	1
ProQuest	2	0	2	1
PsycINFO	155	12	2	1
Chasing	5	0	1	1
Total:				14

Table 2.2

Levels of Evidence and Quality Grade Table

Levels of Evidence	Number of Articles
Level I	1
Level II	3
Level III	1
Level IV	2
Level V	7
Quality Grade	Number of Articles
A (high quality)	7
B (good quality)	7
C (poor quality)	0

Level I evidence.

Emerson, Matthews, and Struwe (2018) conducted a prospective cohort study to determine the prevalence of PPD in new mothers during screenings at the 2-, 4- and 6-month well-child visit (WCV) in an urban outpatient pediatric, examine feasibility factors relative to extending the current standard of care for PPD screenings; and examine visit documentation for at-risk mothers. A study was conducted over a 6-month period to gather information regarding screenings for new mothers at their 6-month well-child visit. This article was well written and organized (grade A). The quality of the prospective cohort study was very well explained and detailed. Inclusion criteria included postpartum women (not pregnant), able to read and understand English, 19 years or older, and attending the 6-month WCV. There was a clear statement of purpose and methods for evaluation were clearly stated. Data collection methods were stated clearly, and participants were given consent to participate. The study's strengths and limitations were indicated in the article. The study resulted in forty-three women participants, while prevalence rates among participants were 10%, 12.5% and 14% for 2-month, 4-month, and 6-month visits. Two of the six mothers that were identified to have a positive screening did not have a positive screening at the 2- and 4-month visit, while the remaining four had a positive screening at the 4-month visit. Concluded that the prevalence of postpartum depression among the participants is consistent with previous rates anticipated. The prevalence rate of positive EPDS for the 6-month WCV prevalence rates at 14%. The prevalence rate for the 2-month WCV was 10% and 12.5% for 4-month WCV. There were 47% of the visits that contained documentation of suicide, while treatment options and PPD education was documented at 87% of the visits. Screening mothers multiple times throughout well-child visit is relevant and beneficial to identify postpartum depression and its persistence. There were some mothers who declined screening, which indicates that there is a need to explore the mother's acceptability to be screened. This study implies that in order for screening to be effective among

individuals identified with the risk of depression there must be a system in place to ensure adequate follow-up.

Level II evidence.

Friedman, Rochelson, Fallar, and Mogilner (2016) conducted a quasi-experimental study that examined the effects of educational sessions about postpartum depression and modification of the electronic medical record on providers screening for postpartum depression. The study was conducted in a pediatric office in East Harlem, where a large population of low-income patients resided. An educational session was given to the physicians and pre- and post-surveys compared to comfort and self-reported screening. There were three groups that received individual educational sessions regarding postpartum depression and screening. One hundred charts were reviewed at three different time periods, prior to the education intervention, after the educational intervention but prior to the EMR changes and after EMR changes. Within-group 1, none of the mothers documented PPD screenings, group 2, 2 of the 100 (2%) mothers were screened and neither screened positive, and group 3, 69 (74%) mothers were screened. Within-group 3, the 69 mothers that were screened, seven (10%) screened positive. There was a statistically significant difference between the groups. Compliance with providers increased after educational pieces were provided. However, some providers felt uncomfortable with screening mothers, due to the unfamiliarity of the screening tools and referral process. "The mean score on a test of general knowledge of PPD increased from 55% in the pre-group to 70% in the post group who attended the educational conference" (Friedman et al., 2016, p. 795). The study concluded that PPD screens are valid and can be integrated within a well-child appointment. The increase of knowledge allows pediatricians to have a better understanding of the screening tools and its use, which essentially increases the actual screenings. This article was well written and concise (grade B). The purpose was clearly stated, and data was presented clearly throughout the article.

Leis et al., (2014), conducted a pilot study that integrated an evidence-based preventive intervention into a pediatric primary care clinic. The study took place in a low-income urban community. The standard of care in this clinic included mothers bringing their infants for newborn, 2-, and 4-month well-child visits was to meet with the clinical social worker for an assessment of maternal health status and associated stressors using the USPSTF 2-item depression screener. The inclusion criteria for this study included women who were experiencing depressive symptoms and exclusion criteria included psychosis or significant mental health impairment. After the selection of women for participation, two cohorts participated in the MB Course. The MB Course is an intervention that uses cognitive-behavior therapy approach to the management of moods by incorporating social learning concepts. These concepts help reduce depressive symptoms. The intervention included 6 weekly, 2-hour sessions. These 6 sessions were divided into 3 modules: (1) promoting pleasant activities, (2) reducing harmful thought patterns and increasing helpful thought process and (3) promoting social support. There was a total of 15 women who participated in the study, who enjoyed participating in the study. Participants who attended a vast majority of the sessions showed higher levels of engagement and accepted the intervention format and content presented. The findings of this study indicated that implementing an evidence-based preventive intervention for PPD in a pediatric primary care setting serving this particular population was successful. This study was written clearly and appropriately (grade B). Authors clearly identified possible outcomes and limitations to the study.

Van der Zee-van den Berg, Boere-Boonekamp, IJzerman, Haasnoot-Smallegange and Reijneveld (2016) conducted a systematic review investigating the evidence of the effectiveness of screening for postpartum depression in well-baby care settings, regarding mother and child outcomes. The inclusion criteria and articles selected for review had great quality and were assessed with the Quality Assessment Tool for Quantitative Studies. Some inclusion criteria included women up to 12 months postpartum, screening using a valid screening instrument and

articles written in English, Dutch, German or French. While some exclusion criteria include studies with no control group to compare effectiveness, screening using a non-validated instrumented, screening during pregnancy only and articles not written in other languages. From these 3,033 articles screened six articles were selected. The article was well written and organized (grade A) and the selected articles were explained in great detail. These six studies were evaluated within this systematic review, of these six studies, two were rated strong pieces of evidence and four were rated weak. The six selected articles range from a variety of study designs, two being pre- and post- design with no blinding, one quasi-experimental and three RCTs. After the assessment of the articles using the Quality Assessment Tool for Quantitative Studies, overall the authors reported the articles to be strong to weak. From the studies, there were four studies that supported the use of screening and enhancing care for postpartum women. There were small sample sizes that made the evidence found relevant but not significant, therefore higher-quality studies are needed to strengthen the evidence regarding the benefits of screening in a well-baby care setting according to this review. Within this review, multiple databases were searched, identified and details of the studies were presented. The review was well written, and information flowed logically, and conclusions were based on the results of the studies.

Level III evidence.

Waldrop, Ledford, Perry, and Beeber (2018) conducted an appraisal on current evidence on implementing screening for postpartum depression within a pediatric primary care setting. After a search in multiple databases using inclusion criteria such as dated after 2010 and implementation of PPD screening in a pediatric primary care setting while exclusion criteria included studies done outside of the United States, from this search a total of seven studies were selected. These seven studies included one RCT, three quasi-experimental, two quality improvement and one qualitative study. There were three screening tools used within these studies, the Edinburgh Postnatal Depression Scale (EPDS), PHQ-2 and PHQ-9. The screening

tool was provided during the intake process and a range of 27.8% to 78.8% of participants completed the questionnaires. Within this appraisal, a description of the use of an algorithm for screening is described and having supportive resources as well as a referral process in place for practice. The authors of this appraisal identified the use of a clinical decision support algorithm for screening and how its use is effective within the pediatric setting. "Using a decision support algorithm that a pediatric primary care practice can adapt to fit its setting and needs is a good place to start" (Waldrop et al., 2018, p.e70). This review concluded that the evidence supporting the implementation and evaluation of PPD screening in a pediatric setting was effective. The evidence was evaluated using the Grading of Recommendation Assessment, Development and Evaluation (GRADE) criteria. These GRADE criteria measured the evidence as moderate to low. This appraisal resulted in that screening for postpartum depression was feasible to do at the local level. The purpose of this review was clearly stated and well written (grade A). The search terms were clearly stated, and databases were indicated, the inclusion and exclusion criteria were stated within the review and the flow of the studies reviewed was concise.

Level IV evidence.

Rafferty, Earls, Yogman, and Mattson (2019) provided a screening recommendation from the AAP stating that providers should screen women for maternal depression at well-child visits. "Pediatric medical homes can establish a system to implement screening and to identify and use community resources for the further assessment and treatment of the mother with depression as well as for the support of the mother-child dyad" (Rafferty et al., 2019, p. 3). AAP policy states there is much support for primary care pediatricians to incorporate these approaches for implementing these screenings. The recommendations include the use of a validated screening tool for maternal depression during well-child visits at 1, 2, 4 and 6 months. There are also recommendations for follow up, referral processes and treatment options for providers to follow to ensure the best patient outcomes are available for all patients. Within the

statement, there are examples and resources for the providers to consider for their patients. The clinical practice guideline is well written and relays information concisely (grade A). Information is sponsored by a professional organization and has consistent and clear recommendations. Utilizing clinical practice guidelines within the EBP project strengthens the project and its support of implementation.

The AWHONN (2015) authored a position statement on mood and anxiety disorders in pregnant and postpartum women. The statement recommends universal screening of all pregnant and postpartum women for mood and anxiety disorders. Healthcare facilities that serve pregnant women, new mothers, and newborns should have policies and protocols that address screening and education for women and mechanisms for staff training regarding these disorders. It is recommended that registered nurses are in key positions to recognize and perform screenings to help identify at-risk women. Nurses can do so by providing initial effective interventions, improving access to community-based resources and being the gap between patients and healthcare providers. This position statement was well written and relayed information concisely (grade B). This statement provides strength to the EBP project by positively informing individuals of the need and importance of screening. With the support of a professional organization, its recommendations are clear and specific.

Level V evidence.

Gyi (2018) conducted an evidence summary based on postpartum depression and the best assessment tool for screening. This evidence summary based on a structured search of the literature and steams from clinical practice guidelines, a systematic review and observational studies. Guidelines recommend health professionals perform a routine assessment of the emotional and wellbeing of women, while the systematic reviews assess the accuracy of screening tools. These systematic reviews indicated that EPDS was the most accurate and valid tool for screening. According to Gyi (2018), it is recommended that all health care professionals involved with the care of the patient should assess for postpartum

depression. Gyi (2018) provides a detail explanation of the proper assessment of postpartum depression using the EPDS and the identification of scores. Individuals who score 10, 11 or 12 should be reassessed within 2-4 weeks and support services increased. Those individuals who score 13 or 14 should be referred to an appropriate health professional. While individuals scoring 15 or more should have access to a mental health assessment and management immediately. Those individuals who score 1, 2, or 3 on question 10 should be assessed for the safety of self as well as children in care. Gyi (2018) provides best practice recommendations for health professionals to follow in order to care for postpartum women appropriately and effectively. This evidence summary is written clearly and organized (grade A), recommendations were clear, types of evidence were included, and literature was up to date. The evidence obtained was consistent with other high-level studies and the source of information was credible.

Gilbert, Balio, and Bauer (2017) summarized the current literature regarding the responsibilities of providers, liabilities, and perspectives of providers within a pediatric setting screening for postpartum depression screening. Gilbert, Balio and Bauer (2017) stated “the guidelines call for (1) maximizing benefits while minimizing burdens (2) assessing the likelihood of effectiveness, voluntariness of the interventions and distribution justice; (3) respecting patient and parent autonomy, privacy and confidentiality; (4) considering the responsibility and liability of the provider; and (5) seeking input from all stakeholders “ (p. 269). The authors noted that there is a burden placed on caregivers when screening is done alone. It is ethically imperative that mothers who screen positive have an appropriate follow-up process for the support of both the mother and infant. For pediatricians, there is a fiduciary duty to provide care for the children beyond the child due to children not having the capability to speak for themselves and having legal guardians. The literature supports a variety of terms in which the healthcare provider is responsible to ensure patients are receiving the best care possible. These terms include beneficence, non-maleficence, autonomy, informed consistency, confidentiality, privacy, utility,

and distributive justice. Each of these terms was discussed within the literature and how pediatricians have a legal obligation to provide the best care for their patients, which extends beyond the actual patient themselves. Medical liability plays an important role in appropriate care being given to patients. It hinges on if a provider is practicing responsible and consistent with the standard of care. Screening mothers in a pediatric setting can be argued that the pediatricians have an ethical responsibility to care for the mother who is caring for their patient. The literature supports the use of a valid tool to screen postpartum women for postpartum depression. The most common tool used for identifying symptoms was the EPDS and the PHQ-2 or PHQ-9. Within these supporting literatures there is a strong legal and ethical case supporting the implementation of a universal screening for PPD in a pediatric primary care setting using validated tools when informed consent can be obtained and appropriate follow-up services available and accessible. This review of the literature is well written and described the aims in great detail (grade A/B). The strengths, limitations and future implications were expanded upon clearly and concisely. There was no bias reported in the literature review noted.

Kurtz, Levine, and Safyer (2017) conducted a literature review addressing the concerns of implementing postpartum screening within a pediatric primary care setting. Kurtz et al., (2017) provide information regarding types of postpartum mood and anxiety depressive disorders (PMADs), such as depression, baby-blues, postpartum depression, anxiety and postpartum psychosis, and how they can impact an infant. The impact and management of each depressive disorder are based on the severity of the mothers' symptoms. The baby-blues seem to affect between 15% to 85% of new mothers, while postpartum depression affects 10-20% of mothers. Postpartum anxiety disorders affect between 11% to 21% of women while postpartum psychosis occurs as high as 30%-50% of women. These depressive disorders are common postpartum and can occur up to 1 year postpartum. These depressive disorders have different impacts on the infant's life based on the severity of the mothers' symptoms, mothers with PMADs tend to have lower levels of maternal sensitivity which can be neglected for the infant. PMADs have a

negative impact on the mother-infant relationship which leads to a dysfunction of infant development. Implementation of screening for postpartum depression is based on the individual characteristics of the pediatric office setting. There are recommendations based on AAP, Bright Futures, DC Collaborative for Mental Health in Pediatric Primary care and the Society for Developmental and Behavioral Pediatrics (SDBP) Workgroup and state legislations. Kurtz et al. (2017) recommend the Plan-Do-Study-Act (PDSA) cycle to implement practice change following the evaluation of the special needs of each pediatric clinic setting. Screening mothers using the EPDS, PHQ-2, and PHQ-9 was recommended based on the pediatric setting environment. The study concluded that it is possible to implement the screening program within each practice to better serve mothers and infants. The study was written well and reviewed the current literature appropriately (grade B).

Olin et al., (2017) reviewed literature that suggested that there are specific strategies to aid in the implementation of screening for postpartum depression within a pediatric setting. The authors produced a stepped care approach to caring for screening and managing postpartum depression. Step 1 included screening for depressive symptoms using either rather EPDS or PHQ-9 to screen mothers in a pediatrics setting beginning at the 2-month well-baby visit through the 6-month well-baby visit. These early screening measures can lead to early treatment of postpartum depression. Step 2 included psychosocial risk assessment to understanding the contributing factors leading to PPD. Targeting these contributing factors can aid in the development of the support needed by pediatric providers. A risk assessment tool can be used to assess perinatal risk for depression in primary care settings, which aids in the development of screening tools postpartum. Step 3 detailed care management based on the risk profile for women who fall in the middle section of the care pathway, with moderate levels of depression symptoms. These women benefit from supportive interventions that can be integrated within the well-child visit. Step 4 provided guidance for follow-up and monitoring of PPD, suggest following up at the 6-month well-care visit for individuals who are high risk and that periodic reassessment

is included, which entails life events that can affect maternal and child well-being. Maternal depression can last up to one year postpartum, if unaddressed. Recognizing PPD risk factors during well-child visits is important for continuous monitoring.

This stepped care approach includes systematic screening for depression symptoms, and a systematic risk assessment for women who screen positive and care management based on risk profiles and responsiveness. The literature concludes that the proposed pathway (stepped care) is a testable model that can be integrated into a pediatric setting to improve child well-being. There are challenges in implementing screenings in pediatric settings such as lack of confidence and in effectively managing mothers, lack of reimbursement, social and environmental factors, lack of supportive interventions, concerns of confidentiality and sensitivity and provider documentation. These challenges are real but not insuperable. The review of literature is well written, and information is relayed concisely (grade A/B).

Mgonja and Schoening (2016) implemented a quality improvement project to implement and evaluate a postpartum depression screening program utilizing the EPDS within a pediatric setting. During well-child appointments up to one year of age, mothers were screened for postpartum depression at a private, faith-based primary care clinic in the Midwest. The authors used the Plan-Do-Study-Act (PDSA) framework to guide their project. The EPDS was given to mothers (ages 19 years or older) at well-child appointments, and results reviewed frequently to incorporate protocol changes as necessary. Developing a care plan for mothers scoring of 10 or higher was termed triage care and considered a positive result. There were a total of 35 mothers screened over 9 weeks. Staff compliance, which was calculated weekly, was 78.7% of administering the screening tool, there were a total of 10 (21.3%) missed opportunities. Mothers that were screened ranged from ages 20-34 years, while the infant ages range between 2 weeks to 12 months. Results indicated that there were five positive EPDS screenings during this project implementation. The study concluded that screening mothers during well-child appointments is appropriate and if not done is a missed opportunity for providers. This study

supports the use of implementing a screening tool within a pediatric setting to identify PPD at well-child visits up to one year of age. This quality improvement project was written clearly and examines the workflow and processes of incorporating the screening tool into a pediatric setting (grade A). The aim of the project was stated clearly, and results were described and interpreted clearly.

Puryear, Nong, Correa, Cox, and Greeley (2019), conducted a quality improvement project that increases access to perinatal mental health services through a universal screening tool for postpartum depression and facilitating referrals for evaluation and treatment at a multi-site, integrated system of pediatric and obstetric practices in Houston, TX. Women were screened with the EPDS twice during pregnancy and at 6 weeks postpartum by their obstetric provider and at their infant's 2 weeks, 2-, 4- and 6-month at well-child visits by pediatricians. Women with a score of 10 or higher or women who reported thoughts of self-harm were offered a referral to a mental health provider. A total of 102,906 women were screened over a four-year period. Of those, 6,487 (6.3%) screened positive and with 3,893 (3.8%) referred for treatment. From those referred for treatment, 2,172 (55.8%) women made an appointment with a mental health provider within 60 days of the referral. 170 positive screens resulted in 185 (108.8%) referrals with 153 (82.7%) appointments completed for one obstetric practice. The obstetric practices with colocated referral model, 1,489 positive screens resulted in 2,222 (149.2%) referrals with 1,702 (76.6%) completed appointments. The pediatric practice with adjacent lactation of women's clinic, 220 positive screens resulted in 96 (43.6%) referrals and 39 (40.6%) appointments completed. While the remaining pediatric practices had 4,608 positive screens resulting in 1,390 (30.2%) referral sand 278 (20.0%) completed appointments. This quality improvement project indicated with adequately trained staff and systematic planning that PPD can be screened within both obstetric and pediatric practices and high screening and referral rates can be achieved. This quality improvement was well written and relayed information clearly (grade A). The aim of the project, strengths, limitations and results were clearly stated.

Sorg, Coddington, Ahmed and Richards (2019) conducted a quality improvement project to improve standardized screening for postpartum depression for a 3-month period in the pediatric care setting in a rural federally qualified health care center (FQHC) in north-central, Indiana. There were secondary aims to determine if infant and family characteristics were associated with positive postpartum depression screening. This implementation of the EPDS screening tool occurred at 1, 2 and 6-month WCC visits and was evaluated by independent samples t-test and logistic regression for data analysis. The EPDS was administered by the nurse or medical assistant (MA), and then the PCP reviewed the results and implemented the next step based on the score. The results were recorded in the electronic medical record (EMR) by the nurse or MA, and the EMR scored the completed EPDS. This quality improvement project was based on the PDSA framework and showed a slightly significant increase in PPD screening practices with improvement from 83% to 88% ($p = 0.096$). This project indicated that mothers who were screened at 1-month well child check (WCC) visits had higher rates than mothers screened at 2 or 6-month WCC visits. Demographics such as male gender, Medicaid and Hispanic ethnicity had a higher likelihood of positive screenings. Mothers who bottle-fed versus exclusively breastfeed had a lower likelihood of positive screenings. Monthly income affected positive screening rates, whereas mothers who earned less than \$2,000 a month had higher positive screening rates. This quality improvement project indicated that pediatric health care providers can effectively screen for PPD and certain infant and family characteristics might alert the provider to a higher risk for mothers. This quality improvement project was well written and provided clearly stated aims and results (grade B). There was no bias reported in the project.

Construction of Evidence-based Practice

Synthesis of Critically Appraised Literature

The appraisal of these fourteen relevant pieces of literature specified a deeper understanding of implementing a screening protocol for PPD within a pediatric setting. Studies

that were used within the appraised literature disclosed findings and recommendations for practice in direct response to this project's PICOT question. The literature evidence supporting this project revealed comparable findings and recommendations for best practice (See Table 2.2). The use of the EPDS (intervention) to screen postpartum women presenting to the pediatric setting for their infant's well-child visits (population) was supported in the literature as an effective way to identify PPD (outcome) in pediatric settings up to six months after delivery (timeframe).

Population. The literature was divided when deciding to measure depression either in a pediatric setting or an obstetric setting. The underlying goal across all of the studies was to increase the use of PPD screening in a pediatric setting. All of the guidelines suggested measuring depression prenatally and postpartum or anytime when in contact with a perinatal mother (AWHONN, 2015; Gyi, 2018; Fafferty et al., 2019). With the assessment of mothers postpartum, many studies implemented a protocol for measuring PPD within an urban setting to explore any acceptability and outcomes (Friedman et al., 2016; Leis et al., 2015). While there was implementation across urban settings, the literature did support implementing a protocol within all pediatric areas, rather urban, rural, heavy populated or not (Puryear et al., 2019; Kurtz et al., 2017; Gilbert et al., 2017; Olin et al.).

Interventions. The literature appraised suggested that there was an intervention tool that would be best for use in a pediatric setting to screen for postpartum depression. A simple 10-item self-report questionnaire, the EPDS was provided to all the patients who met criteria to be screened prior to seeing the provider (Gyi, 2018; Emerson et al., 2018; Olin et al., 2017; Kurtz et al., 2017; van der Zee-van den Berg et al., 2016; Waldrop et al., 2018; Sorg et al., 2019; Puryear et al., 2019; Mgonja & Schoening, 2016). The evidence suggests that this screening tool is the most effective and valid. Some pediatricians opted to utilize different screening tools in combination with the EPDS such as the PHQ-2 or PHQ-9 (Waldrop et al., 2018; van der Zee-van den Berg et al., 2016; Kurtz et al., 2017; Gilbert et al., 2017; Olin et al., 2017).

Length of intervention. The length of the intervention varied from eight weeks to four to six months. The screening process for mothers had some consistency throughout most of the studies, typically including screening at 2, 4 and 6 month well-child visits with some variations, based on pediatric visits (Emerson et al., 2018; Olin et al., 2017; van der Zee-van den Berg et al., 2016; Sorg et al., 2019; Puryear et al., 2019; Mgonja & Schoening, 2016). In addition, the length of the intervention did not extend past 6 months due to 6 months being the peak of when women experience PPD.

Best Practice Model Recommendation

The best practice model recommendation developed for this EBP project was synthesized from the most current, best available and critically appraised evidence. Postpartum women are not currently screened effectively due to the limited amount of time they visit with their obstetrician. Women have only one or two postpartum visits with their obstetrician which is a narrow window for screening, while “a pediatric primary care provider sees a mother as frequently as eight times within the first 6 months of her child’s life, placing pediatric providers in a strategic position to screen for PPD” (Waldrop et al., 2018, p.e68). Henceforth, postpartum depression can negatively affect the mother’s engagement with others. “Postpartum depression impacts not only the mother, but it also affects the family, most notably the infant. Untreated PPD is associated with lower rates and shorter duration of breastfeeding, poor maternal-child bonding, child and infant developmental delays and poor mental health outcomes in childhood” (Sorg et al., 2019, p.84). Therefore, screening for postpartum depression in a pediatric setting creates a destigmatizing opportunity for providers to ensure measures are being taken to properly screen for mood disorders, closing the gap of mothers being overlooked for screenings. Consequently, screening mothers in a pediatric setting using the EPDS was created as an EBP project to link current evidence to practice and potentially impact all postpartum mothers during well-child visits. This program was developed in a pediatric setting in a patient-friendly format that can easily be implemented in other pediatric settings and aligns with recommendations

from AAP, USPSTF, AWHONN, CMS, and National Association of Pediatric Nurse Practitioners (NAPNAP). This author proposed that implementing the best practice model, *You're Not Forgotten*, would demonstrate that mothers participating in the screening process in a pediatric setting would demonstrate positive shifts in knowledge and attitudes about post-partum depression and seek treatment for postpartum depression following the program intervention.

CHAPTER 3

IMPLEMENTATION OF PRACTICE CHANGE

Implementation of an evidence-based protocol including the use of a PPD screening tool for the identification of postpartum depression in mothers visiting a pediatric office for well-child visits was considered best practice by the current body of evidence reviewed in the literature. Multiple expert organizational recommendations and position statements support this universal practice change including the AAP, USPSTF, AWHONN, CMS, and NAPNAP. Therefore, this evidence-based protocol was initiated as a result of an identified need and supportive evidence demonstrating positive outcomes. The EBP project included the project coordinator's collaboration with pediatric office providers and staff who appreciate and value the significance of practice change to improve patient outcomes. This EBP project aimed to help identify postpartum depression in women who may not follow up with their obstetrician during the postpartum period and/or were not screened appropriately in the obstetric setting when returning for care post-delivery. The purpose of this project was to improve the identification rates of postpartum depression by implementing a postpartum depression screening in a pediatric setting during well-child visits.

Participants and Setting

The conduction of the EBP project took place in a pediatric office setting located in Fort Wayne, Indiana that provides primary care services to patients across the lifespan of newborns to early adulthood up to the age of 21. The pediatric office providers consisted of a double board-certified pediatrician (MD), office manager, secretaries, a pediatric nurse practitioner (NP), two physician assistants (PAs) and medical assistants (MAs) which will be a part of the practice change. The project coordinator has never been employed by this facility, which aided in eliminating the potential of selection bias. Written permission for the project's implementation was granted on June 19, 2019, by the facility's office manager after discussion with the primary physician of the practice, who was in full support of the project's goals for practice change. Key

stakeholders at the project site supported that the project would be beneficial for the patient population, was feasible for the location of the facility, and staff within the clinic had a vested interest in the project outcomes.

Participants eligible for participation in the project were mothers of infants recruited during their well-child visit appointments at the 1, 2, 4 and/or 6-months visits at the pediatric health center from September of 2019 to November of 2019. The secretaries' role in the project was to review patient charts at check-in to determine initial eligibility based on the type of visit. Participants were postpartum women attending well-child visits that were 18 years or older that have the ability to understand spoken and written English. Spanish assessment tools were provided for patients whose primary language was Spanish but understood English.

Mothers with a positive history of depression, including currently being treated for depression with pharmacological management, cognitive therapy and/or any homeopathical alternatives were eligible for participation but this was disclosed upon the initial patient survey questionnaire collected during recruitment. The decision to include these participants was made by the project coordinator and site facilitator because it was determined that excluding these patients would limit the sample size.

Pre-Intervention Group Characteristics

Participants eligible to participate were adult women, 18 years of age or older regardless of race or socioeconomic status, presenting to the pediatric site during the months of September to November of 2019 for their infant's well-child visits. The participants were English and Spanish speaking individuals, however, those individuals that spoke Spanish, had to comprehend English in order to participate. The inclusion criteria included postpartum women, attending well-child visits between 1, 2, 4, and 6 months at the pediatric health clinic. While exclusion criteria included individuals under the age of 18, non-English speaking adults, and males (fathers). These participants were excluded from the project due to the inability to complete the activities required of the project.

Intervention

After reviewing the recommendations from good and high-quality pieces of evidence, the EBP project intervention was developed based on these best practice recommendations. The most reliable and consistently recommended PPD screening tool to implement in the pediatric setting was the EPDS. The literature supported the effectiveness of using this screening tool to help providers identify the risk for postpartum depression. Each eligible participant that consented to participate in the EBP project received an informed consent (see Appendix D), a recruitment letter including a description of the project participant questionnaire and the EPDS screening via paper and pencil format. Samples of the recruitment letter with the project introduction is presented in Appendix D and the participant questionnaire is presented in Appendix F. After the consent was signed and the screening tool results calculated by the secretarial staff or medical assistants at the project site, the numerical results (ranging from 0-10+) of the EPDS was recorded in the patient's EMR by the secretaries or medical assistants in the PPD screening section of the chart for the provider to access during the well-child visits. All participants with a score of less than 10 on the EPDS resulted in participants receiving information regarding postpartum depression in the form of an educational handout (see Appendix F) and provider discussion as documented in the EMR. A score of 10 or greater on the EPDS resulted in participants receiving information regarding postpartum depression in the form of an educational handout and provider discussion, a list of community resources, as well as referral to their obstetrician or primary care provider for further management and care. When present in the clinical setting, the project coordinator was available to answer questions that any participants had regarding the project, while it was the responsibility of the providers within the clinic to provide education and discuss the results of the screening tool with mothers during well-child visits. The project coordinator reviewed the health records of participants to track scores at each visit, ensured documentation and adherence to educational handouts and discussions by providers as well as resource lists and referrals within the community. The

project coordinator conducted calls to all mothers that scored 10 or higher within 2 weeks of their visit to track compliance with follow-up to referrals. A 12-week follow-up phone call was made to re-evaluate all participants EPDS scores. A review of records as well as patient schedules to evaluate missed opportunities and declination of participation by mothers asked to sign consent was also conducted.

Comparison

The AAP recommends that pediatricians close the gap and initiate screening mothers for maternal depression during well-child visits. Screening mothers at the first six well-child visits increases the chance of a mother disclosing postpartum depression symptoms. The provider is able to see consistencies in scores while tracking her progress within the electronic health record. Compared to the current standard of care consisting of no routine or standardized screening, documentation, education, or distribution of community resources or referral at the pediatric health clinic, this project implementation adheres to best practice optimal mother and baby outcomes.

Outcomes

Multiple outcomes of the EBP project were measured based upon the supporting literature. The primary outcome measured was the effectiveness of the identification of risk for postpartum depression in postpartum women using the EPDS in a pediatric setting during well-child visits. While the secondary outcomes measures including demographic characteristics, different variables that could potentially affect EPDS scores and pre- and post-intervention EPDS scores in relations to follow up.

The secretaries were responsible for checking patients in and distributing the project introduction letter, screening tool, and participant questionnaire. While the MAs were responsible for the calculation and entering of the EPDS scores in the EMR. The providers were responsible for the reviewing of scores and discussion/education patients and to distribute educational handouts and resources/referral lists. The project coordinator was responsible for

conducting follow up phone calls with participants scoring 10 or greater within 2 weeks to monitor compliance with referral follow up. The project coordinator also called all participants for a post intervention EPDS score at 12 weeks. The project coordinator was responsible for reviewing chart records to track maternal EPDS score trends with WCC visits, missed opportunities, declination of participation and provider adherence/documentation of score review, discussion, education and referral as appropriate based on score.

Evaluation of the reported answers and referral process was based on best practice. EPDS is a user-friendly tool that takes approximately 2- 5 minutes to complete with 10 questions presented with options in a Likert scale format. This Likert scale consists of each question that can earn up to 3 points. The mother was asked to check the response that comes closest to how she has been feeling in the previous seven days. There was a maximum score of 30 points. Scores ranging from 0-9 received PPD information and resources, scores 10 or greater received a referral as well as resources and any mother scoring a 1, 2 or 3 to question 10 about suicidal ideation was assessed by the provider and referred out for immediate assistance. Possible risk for depression was indicated with a score of 10 or greater, while scores above 13 were likely to be suffering from a depressive illness of varying severity. This screening tool provided the provider with a clear picture of the patient's mental health status over the 7 days preceding the well-child visit. The AAP does not endorse or approve any specific tool for screening purposes but provides a resource for providers to use to select a screening tool from screeningtime.org. This AAP (2019) authored website offers a variety of resources to assist providers with the screening process for maternal depression, developmental concerns, and social determinants of health. The EPDS tool has 86% sensitivity and 78% specificity and can be completed in five minutes or less and scored three minutes or less (AAP, 2019). Data was collected before the participant saw the provider upon check-in for the appointment at the receptionist desk. Once signed in, the secretary or project coordinator provided the mother presenting for 1, 2-, 4-, and 6-month child visits with a project packet

including an introductory letter about the project, consent form, participant questionnaire, and EPDS screening tool. Once the data form was collected by the MA, the total score and score for question 10 were calculated with a key (see Appendix F) and results were recorded in the EMR for the provider to see with a prepopulated algorithm to guide provider interventions. After the results were recorded, patient names were removed from the form, a unique identifier was assigned for data analysis and subsequent visit tracking and the form were kept in a secure lockbox on site. The project coordinator collected forms weekly to properly analyze the data.

Measurement. Frequencies and descriptive statistics were conducted to evaluate the demographics of mothers and their scores on the form, the credentials of certain providers (NP, PA, or MD) and their adherence to documentation, discussion, etc. with patients about their EPDS scores. A paired sample *t*-test was conducted to evaluate the EPDS scores prior to implementation and 12 weeks post-intervention.

Time

This EBP project was implemented from September 3rd through November 26th of 2019 based on the recommendations from the project site facilitator and correlating academic session of the University in which the project coordinator was enrolled. These dates were prior to the winter months, in which staff and/or patients and families may take a vacation, inclement weather could increase the likelihood of missed appointments and holidays may have impacted the office hours of the clinic. Literature shows that data can be collected anywhere between 8 weeks to 6 months (Kurtz et al., 2017; Rafferty et al., 2019; Sorg et al., 2019; Emerson et al., 2018). Proper implementation of this intervention required at least 60 days which was recommended by the project facilitator and office staff. This timeframe ensured that staff were adaptive to the changes and incorporated the PPD screening recommendation within their daily routines. Planning for this timeframe requires staff education and training, printing preparations, EMR familiarity, templating, and staff participation.

Protection of Human Subjects

The protection of human subjects was maintained throughout the EBP project. The project coordinator was educated regarding the protection of human subjects and successfully completed an ethics course within the Valparaíso University Doctor of Nursing Practice (DNP) curriculum in the fall semester of 2017. Online training was also completed through the Collaborative Institutional Training Initiative (CITI) in April of 2019. A certificate of completion of the CITI course is available in Appendix B. The project coordinator received approval from the Valparaíso University Institutional Review Board (IRB) through an exempt review as a quality improvement project on July 21, 2019. Consent was obtained from participants (see Appendix D) and a thorough written explanation of the project, including the risks, commitment, and benefits, was provided to each participant. Confidentiality was also upheld, and participants were made aware that participation was solely voluntary. No pressure or coercion was involved for participation. The data collected was kept in a secured and private location and identifiable information was removed from the form with unique identifiers assigned for data tracking and analysis (see Appendixes D-E).

CHAPTER 4

FINDINGS

You're Not Forgotten was developed to provide an evidence-based approach to aid pediatric healthcare providers in identifying the risk of postpartum depression in women who were attending well child visits with their infants. This approach helped identify women who may have gone unscreened from missed visits with their PCP or OB/GYN during the postpartum period. To address the issue, the project coordinator developed a 12-week EBP project. The EBP project was designed to determine if screening mothers for PPD using a standardized tool in a pediatric setting would better identify those at risk of developing PPD. This would promote earlier pediatric provider screening and treatment interventions for women with PPD who could possibly be missed otherwise. Primary patient outcomes, including the depression screening scores were measured via the EPDS over a 12-week period. Secondary outcomes, including participant demographics, variables that could potentially affect EPDS scores, and the pre- and post-intervention EPDS scores in relation to follow-up.

Participants

During the time of project implementation, 40 postpartum women presenting to a privately-owned pediatric clinic located in northeastern Indiana were eligible to participate in the project. Of the 40 eligible postpartum women, 37 consented to participate by completing the patient data form and the self-reported depression EPDS screening. However, only 30 women completed and submitted the questionnaire that included the patient data form and self-reporting depression EPDS screening in its entirety. Seven women failed to submit the completed questionnaire or submitted an incomplete questionnaire to office staff and were excluded from further data analysis. As a result of the screening intervention, five women were referred to their OB/GYN or PCP due to their high risk for PPD identified on the EPDS with total scores greater than or equal to 10. During project implementation, all providers (physician, NPs

and PAs) understood the importance for practice change and eagerly participated in the process.

Demographic characteristics for participants ($N = 30$) were analyzed using frequency statistics. Participants infant ages ranged from 1 month to 6 months with 33% of ages being 2 months. The majority of participants were Caucasian (60%), reported having achieved an educational level of a high school diploma (56.7%) and earned an annual income of less than \$25,000 (76.7%) (see Table 4.1). The majority of participants reported no significant past medical history, including any mental health disorders (60%) while the remaining 40% did report a history of a mental health disorder. There were 23.3% participants who received previous treatment but 76.6% denied previous treatment for any psychological conditions and had followed up with their OB/GYN for a medical examination during the postpartum period (56.7%) (see Table 4.1).

Table 4.1

Demographic Characteristics

Demographics	Frequency	Percentage
Number of participants	30	100%
Baby Age		
Mean/ <i>SD</i>	2.6333/1.62912	
1 Month	9	30%
2 Month	10	33.3%
4 Month	8	26.7%
6 Month	3	10%
Race		
African American	7	23.3%
Caucasian	18	60%
Hispanic	5	16.7%
Asian	0	
Other	0	
Yearly Income		
Less than \$25,000	23	76.7%
\$25,000-\$49,999	5	16.7%
\$50,000-\$74,999	2	6.7%
Highest Education		
Elementary	0	
High School	17	56.7%
Some College	4	13.3%
College Graduate	9	30%
Medical History		
Depression	3	10%
Postpartum Depression	2	6.7%
Anxiety	1	3.3%
Multiple History	6	20%
None	18	60%
Current Treatment		
Treatment	7	23.3%
No Treatment	23	76.7%
Type of Treatment		
Medications	7	23.3%
Therapy	0	
No Treatment	23	76.7%

Table 4.2

Demographic Characteristics

Demographics	Frequency	Percentage
Follow up with OB		
Yes	17	56.7%
No	12	40%
No answer	1	3.3%
Follow-up Weeks Postpartum		
1-2 Weeks	1	3.3%
3-4 Weeks	2	6.7%
5-6 Weeks	14	46.7%
7+ Weeks	1	3.3%
No answer	12	40%
Provider at Time of Visit		
MD	5	16.7%
PA	11	36.7%
NP	14	46.7%

Figure 4.1. Infant 's Age

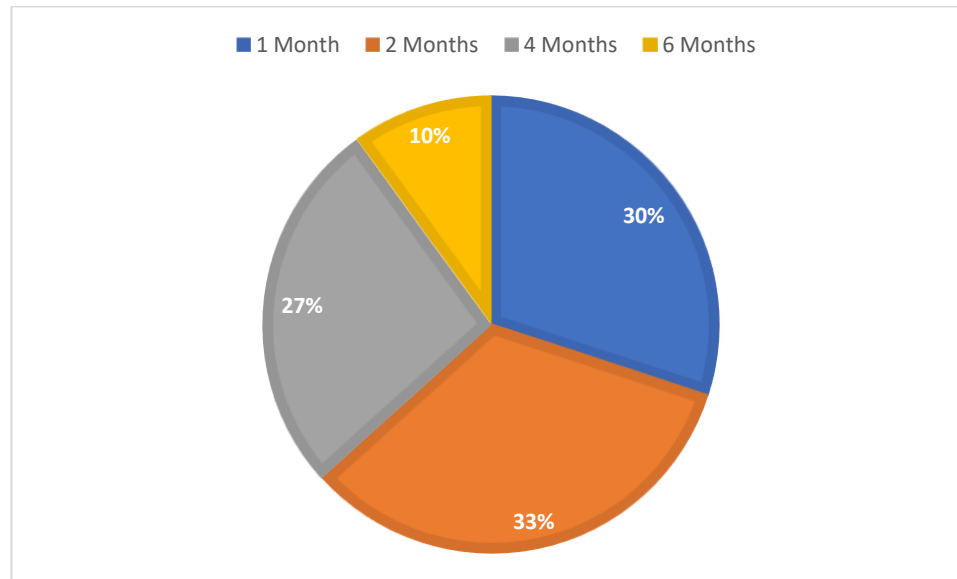


Figure 4.2. Mom's Race

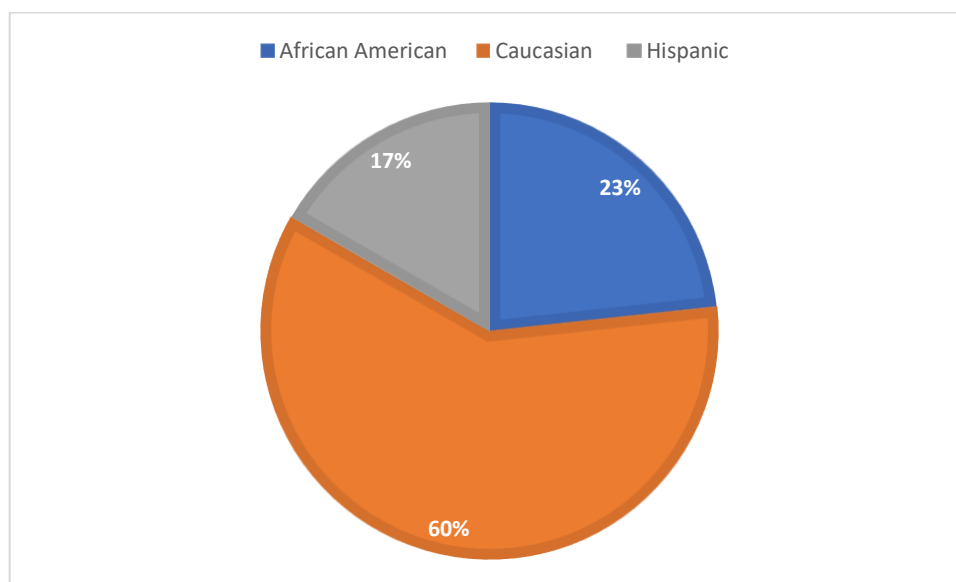


Figure 4.3. Yearly Income

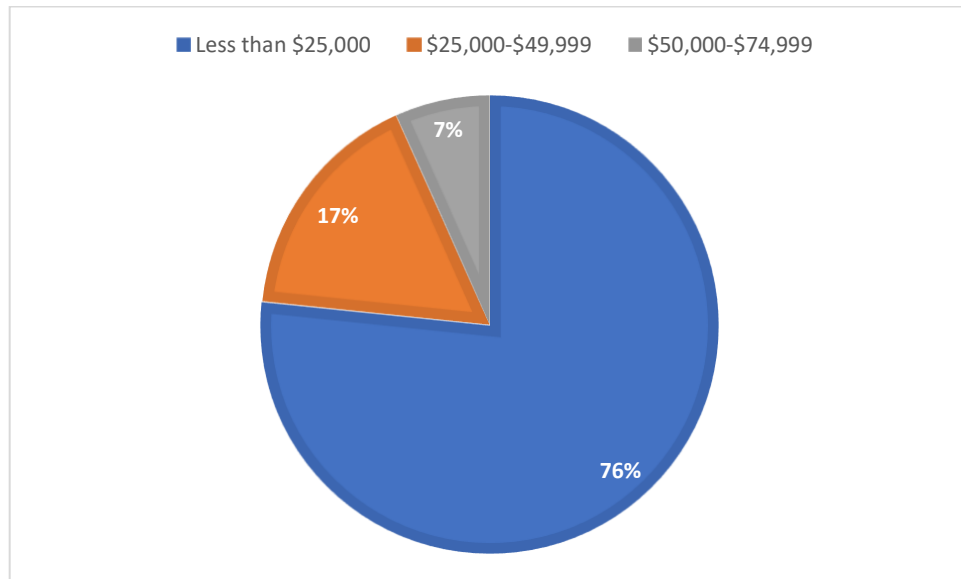


Figure 4.4. Highest Educational Level

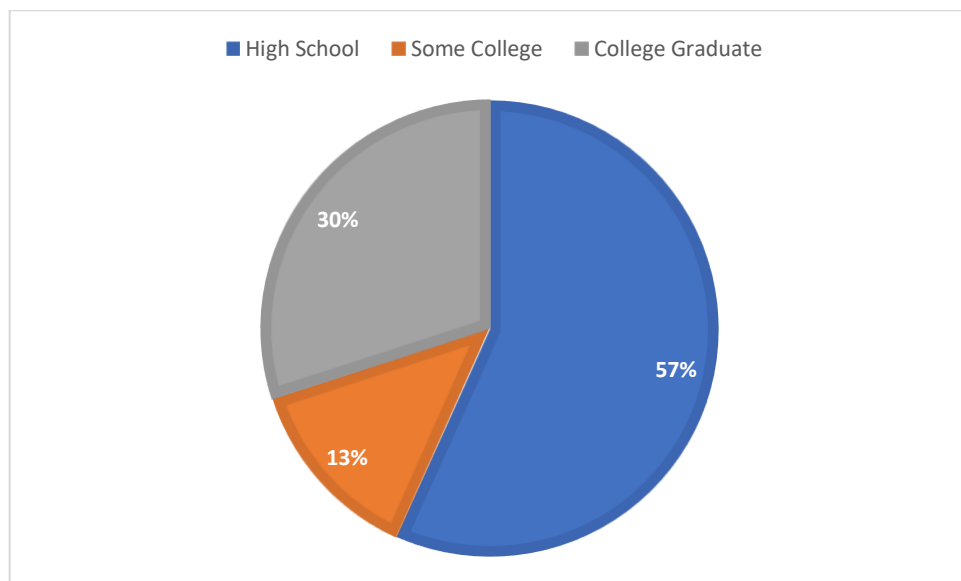


Figure 4.5. Medical History

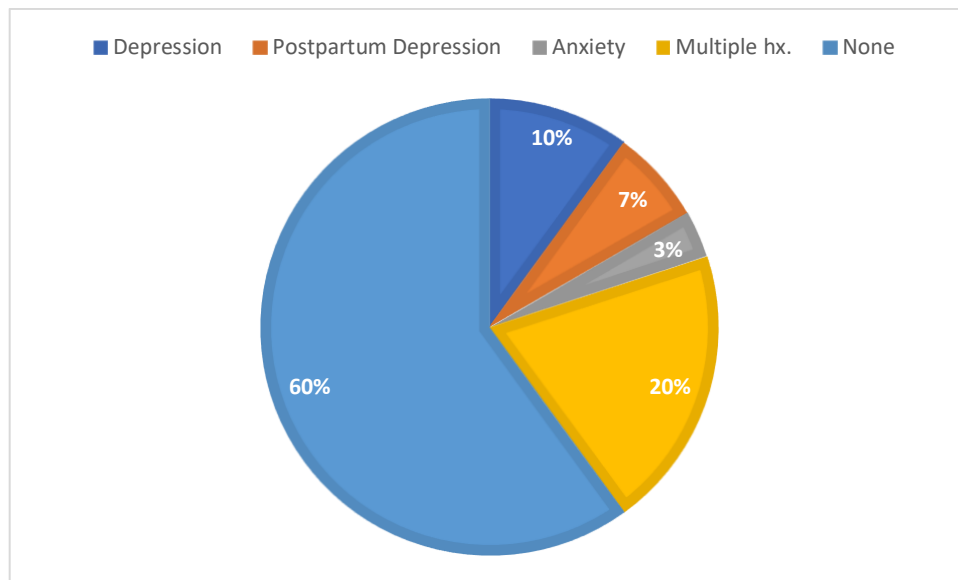


Figure 4.6. Follow-up with OB/GYN or PCP

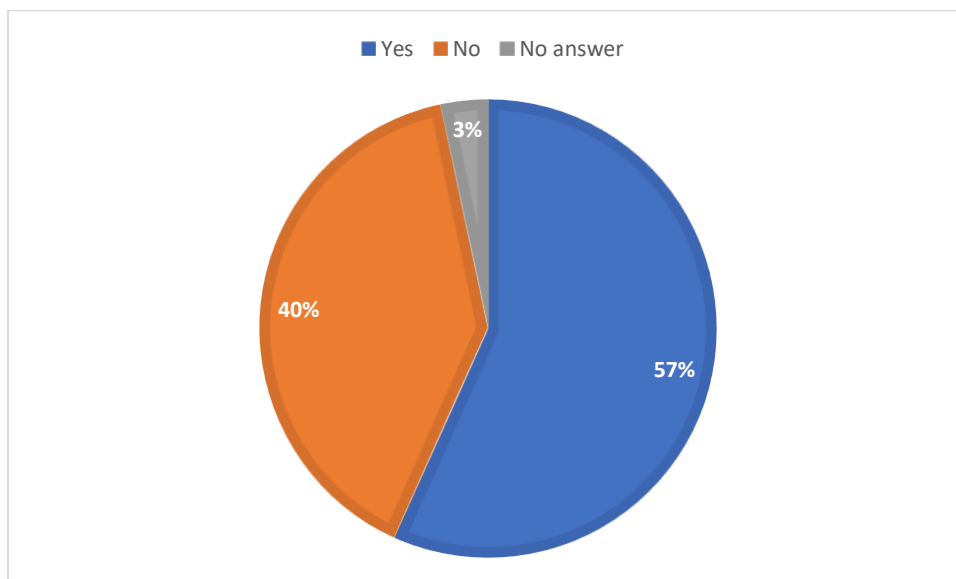
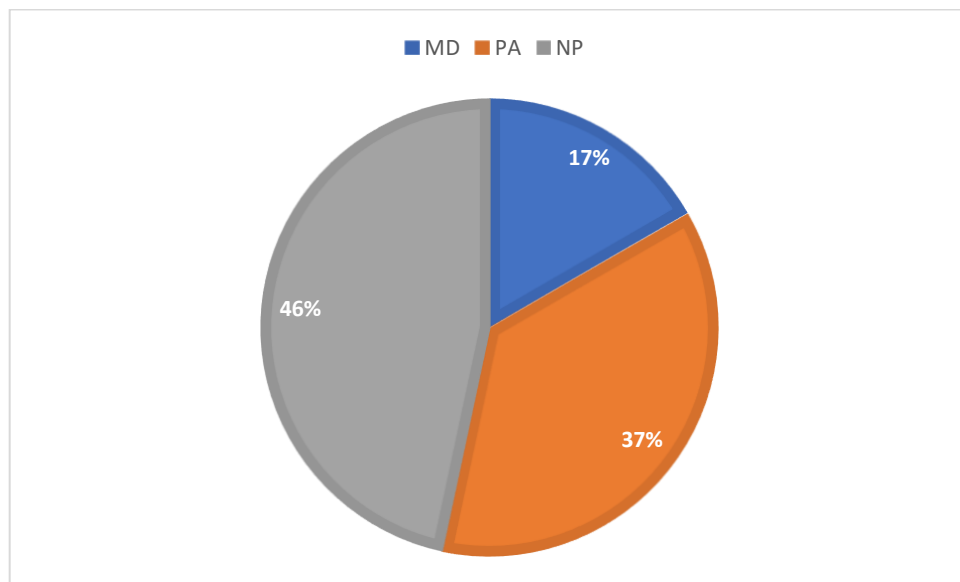


Figure 4.7. Provider at Time of Visit



Changes in Outcomes

You're Not Forgotten EBP project addressed the following PICOT question, "In postpartum women (P), how does the implementation of a screening and referral protocol (I) for postpartum depression in a pediatric setting affect mental well-being (EPDS scores) (O), as, compared to the current practice (C) over a twelve-week period (T)?" The primary outcome of risk for PPD was measured in participants using the EPDS at baseline during the 1, 2, 4 or 6 months well child visit and again at 12 weeks post-intervention. Secondary outcomes, including participant demographics, different variables that could potentially affect EPDS scores and the pre and post-intervention EPDS scores in relations to follow-up.

Statistical Testing and Significance

Data was inputted into the Statistical Package for Social Sciences (SPSS) version 25 software for analysis. The textbook entitled *How to use SPSS: A step-by-step guide to analysis and interpretation* by Cronk (2017) was used to guide the progression of data analysis and interpretation. With the guidance of a statistician student, a paired-samples *t*-test was used to compare the means of participant pre-and post-intervention EPDS scores. Participant demographic data was measured via frequency statistics. A one-way Analysis of Variance (ANOVA) test was conducted to identify project variables in relation to the effects on EPDS scores.

Findings

Project findings indicated that there was significance with the overall primary outcome of participant EPDS scores pre- and post-intervention. Statistical significance was set at $p < .05$ for all analyses. Based on the analysis between variables measured there was a concession of significance and no significance in relation to the results of the EPDS scores. A Cronbach's alpha was conducted to test reliability and validity of the EPDS screening tool and was found to be .855, which demonstrates good reliability and validity.

Primary outcome. The primary outcome of *You're Not Forgotten* was to implement a PPD screening protocol within a pediatric setting. Doing so aided in the identification of at-risk mothers for PPD and providing educational information and a rescreening process to continue to monitor their mental health. The EPDS screening tool was utilized to identify women who were at risk for PPD. Participants were asked to rate their feelings over the past seven days using a 10-item Likert scale. The responses on the EPDS instrument were summed into a total score which identified if the participant was at high risk for PPD at two different intervals over a 12-week timeframe. Total EPDS scores ranging from 0-9 were considered lower risk for PPD and scores of 10 or greater were considered at high risk for PPD. Furthermore, positive answers to question number 10 on the EPDS tool prompted immediate medical attention. A paired-samples *t*-test was calculated comparing the mean of the pre-intervention EPDS total score to the mean of the post-intervention EPDS total score. The mean on the pre-intervention EPDS total score was 4.83 (4.65), and the mean of the post-intervention scores was 2.40 (3.54). A significant decrease from pre-intervention EPDS total score was found $t(29) = 6.625, p < .001$ (see Table 4.3).

In addition to the paired-samples *t*-tests that were calculated for the EPDS total scores, paired-samples *t*-tests were also calculated for each individual item within the EPDS screening tool pre-intervention and post-intervention (see Table 4.3). Each question was scored based on the response of the participant, ranging from 0 to 3 scores, with a maximum of 30. A negative response was scored as 0, while a positive response was scored as either 1, 2, or 3 for questions 1, 2 and 4. While questions 3 and 5-10 were reversed-scored (see Appendix F). Question 1 "I have been able to laugh and see the funny side of things" mean was 0.03 (0.18) $t(29) = 1.000, p > 0.05$, Question 2 "I have looked forward with enjoyment to things" mean was 0.07 (0.05) $t(29) = 1.439, p > 0.05$, Question 3 "I have blamed myself unnecessarily when things went wrong" mean was 0.47 (0.63) $t(29) = 4.065, p < 0.05$, Question 4 "I have been anxious or worried for no good reason" mean was 0.50 (0.73) $t(29) = 3.746, p < 0.05$, Question 5 "I have felt

scared or panicky for no very good reason” mean was 0.30 (0.53) $t(29) = 3.071$, $p < 0.05$, Question 6 “Things have been getting on top of me” mean was 0.47 (0.68) $t(29) = 3.751$, $p < 0.05$, Question 7 “I have been so unhappy that I have had difficulty sleeping” mean was 0.20 (0.47) $t(29) = 2.693$, $p < 0.05$, Question 8 “I have felt sad or miserable” mean was 0.27 (0.45) $t(29) = 3.247$, $p < 0.05$, Question 9 “I have been so unhappy that I have been crying” mean was 0.13 (0.35) $t(29) = 2.112$, $p < 0.05$ and Question 10 “The thought of harming myself has occurred to me” mean was 0.10 (0.31) $t(29) = 1.795$, $p > 0.05$. There was no significant difference in questions 1, 2 or 10, while the remaining questions had a significant difference in the responses pre and post-intervention.

Secondary outcomes. Secondary outcomes included analysis of general demographics and sample characteristics, the relationship between pre- and post-intervention EPDS scores and participant follow-up, as well as relationships among variables and EPDS scores. The participants ($N = 30$) were a diverse group of women ranging from different ethnicity backgrounds, social economic standing and education. Among this diverse group there were 23.3% ($n = 7$) African Americans, 60% ($n = 18$) Caucasians and 16.7% ($n = 5$) Hispanics (see Table 4.1; also see Figure 4.2). Within this group 76.7% ($n = 23$) reported an annual income of less than \$25,000, 16.7% ($n = 5$) had an income between \$25,000-\$49,000 and 6.7% ($n = 2$) earned between \$50,000-\$74,999 (see Table 4.1; also see Figure 4.3). With a variety of yearly incomes, highest educational level attained was also evaluated which ranged from high school graduate to college graduate. There was 56.7% ($n = 17$) of participants who graduated from high school, while 13.3% ($n = 4$) had some college education and 30% ($n = 9$) obtained a college degree (see Table 4.1; also see Figure 4.4). There was some medical history included in the demographic data collection to help support project implementation and success (see Table 4.1) including past medical history relating to mental health (see Figure 4.5) and treatment and follow up with an OB/GYN or PCP (see Figure 4.6) pre- and post-intervention. There were 40% ($n = 12$) of participants that reported having some history of mental disorder

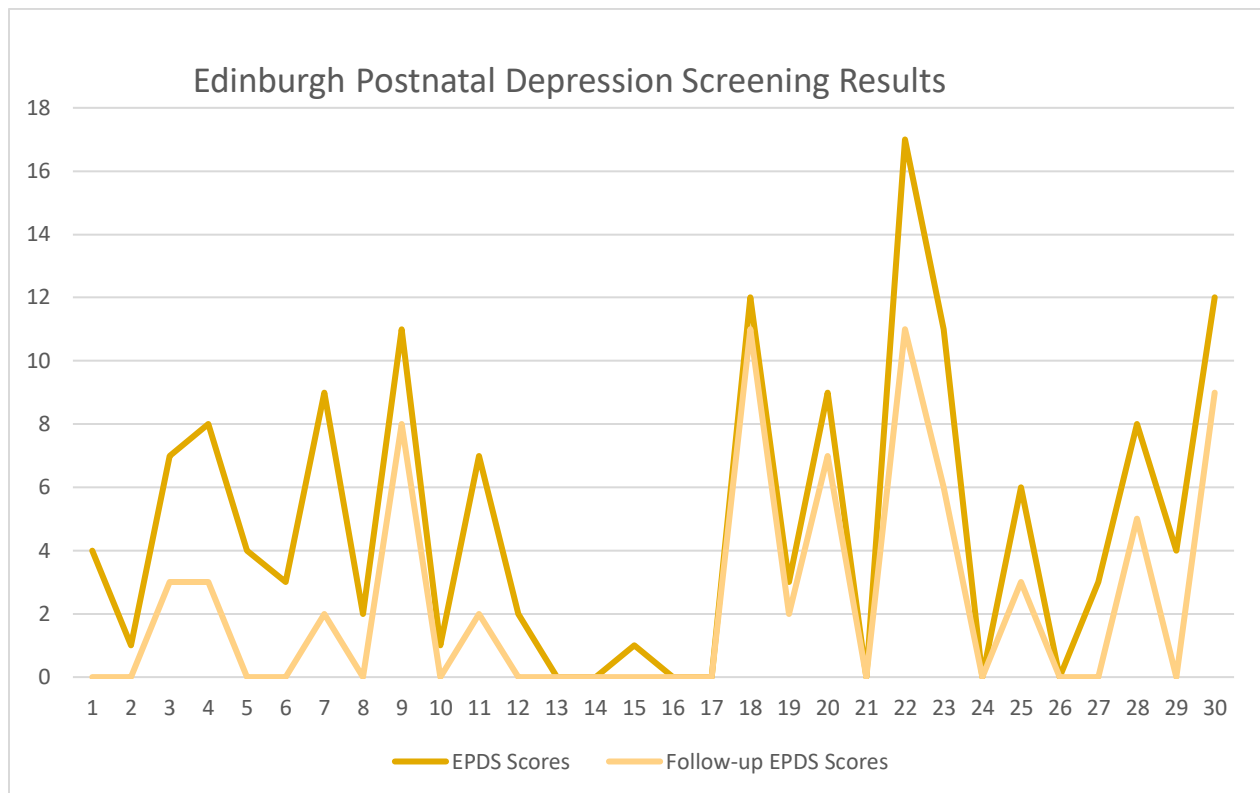
and of those, 23.3% ($n = 7$) were treated with psychiatric medications. Of all of the participants ($N = 30$), 56.7% ($n = 17$) followed up with their OB/GYN or PCP during the postpartum period.

The relationship between the pre- and post-intervention EPDS total scores and follow up with OB/GYN or PCP indicates that receiving educational information as a result of the project intervention impacted the participants' follow-up practices. A paired-samples t -test was calculated to compare the mean of the pre-intervention EPDS score to the mean of the follow up with OB/GYN or PCP, as well as the mean of the post-intervention EPDS score to the mean of the follow up with OB/GYN or PCP. The mean of the pre-intervention EPDS score was 4.83 (4.65) and the mean of the pre-intervention OB/GYN or PCP follow-up was 2.67 (0.76). A significant decrease from the pre-intervention EPDS score to follow-up was found $t(29) = 2.259$, $p < 0.05$. While the mean of the post-intervention EPDS score was 2.40 (3.54) and the mean of the OB/GYN or PCP follow-up was 2.67 (0.76). No significant difference from post-intervention EPDS scores to follow-up was found $t(29) = -0.348$, $p > 0.05$.

Lastly, the effect of certain demographics on EPDS scores was a secondary outcome measured. The different demographic variables (race, yearly income, baby's age, education level and medical history) were evaluated using a one-way ANOVA. A one-way ANOVA comparing the postpartum mother's baby's age to the EPDS score was conducted. There was not a significant effect on the postpartum mothers' baby's age on total EPDS score at the $p < 0.05$ level for these conditions $F(3,26) = 1.798$, $p > 0.05$. Postpartum women who began the intervention when their baby was 1 month old scored a mean EPDS of 3.56 (3.84), 2 months old mean EPDS of 4.50 (4.88), 4 months old mean EPDS of 7.75 (4.83), and 6 months old mean EPDS of 4.83 (4.65). A one-way ANOVA comparing the participant's race to the total EPDS score was conducted and there was no significant effect found $F(2, 27) = 0.397$, $p > 0.05$. Participants who were African American had a mean of 4.71 (5.06), those who were Caucasian had a mean of 5.33 (4.93) and those who were Hispanic had a mean of 3.20 (3.27). A one-way ANOVA comparing the participant's yearly annual income to the total EPDS score was

conducted and there was no significant effect on the yearly annual income on total EPDS scores at the $p < 0.05$ for these conditions $F(3, 27) = 1.403$, $p > 0.05$. Participants who made less than \$25,000 had a mean of 4.91 (4.69), those who made between \$25,000 and \$49,999 had a mean of 6.40 (4.62) and lastly those who made between \$50,000 and \$74,999 had a mean of 0 (0). A one-way ANOVA comparing the participants highest educational level achieved to EPDS scores was conducted and there was no significant effect on the highest educational level achieved on total EPDS scores $F(2,27) = 1.787$, $p > 0.05$. The participants who graduated high school group mean was 5.88 (5.07), those who had some college experience had a mean of 5.75 (5.06) and those who graduated from college mean was 2.44 (2.88). Finally, a one-way between subjects' ANOVA was conducted to compare the effect of past medical history on EPDS total scores. There was a significant effect of past medical history on EPDS total scores at the $p < .05$ level for the three conditions $F(4, 25) = 3.121$, $p = 0.033$. Post hoc comparisons using the Tukey's range test, also known as the honestly significant difference (HSD) test, indicated that the mean score for depression, $M = 11.33$ (.58), was significantly different than postpartum depression, $M = 4.50$ (6.36), and other variable outcomes $M = 7.00$, (6.63). Taken together, these results suggest that history of past medical disorders have an effect on EPDS total scores. Specifically, the results suggest that those who have suffered from any mental health medical disorder are at a higher risk for PPD.

Table 4.3

Edinburgh Postnatal Depression Screening Individual Results

CHAPTER 5

DISCUSSION

The results of *You're Not Forgotten* EBP project provide direction for providers to screen for postpartum depression within a pediatric practice. The EBP project was intended to answer the following PICOT question, "In postpartum women (P), how does the implementation of a screening and referral protocol (I) for postpartum depression in a pediatric setting affect mental well-being (EPDS scores) (O), as, compared to the current practice (C) over a twelve-week period (T)?" The project examined the impact of the use of postpartum depression screening tools such as the EPDS tool to screen mothers during well-child visits to heighten awareness and identification of postpartum depression and mental wellbeing of mothers. This chapter will provide enlightenment and clarifications of the EBP project findings as well as provide an evaluation of the applicability of the EBP model used to guide this project. Strengths and limitations to the project will be discussed as well as implications for future practice, education, and research.

Explanation of Findings

Project findings support the use of an effective postnatal depression screening tool within a pediatric setting. Such results were consistent with current evidence-based supportive literature. Project outcomes, including demographic characteristics and intervention data will be discussed. Outcomes including pre and post-intervention EPDS scores and the relationships between demographic characteristics and EPDS scores will be expanded upon. Additionally, participant adherence to follow-up recommendations provided during the intervention will be reviewed.

Participant findings

Based on the information reported in the current literature a larger sample size was expected for this quality improvement project. The sample size for this project was limited for several contributing factors. These contributing factors included a limited intervention timeframe

as designated by the University where the project coordinator was enrolled and missed opportunities for screening within the practice. The intervention time frame of 12-weeks was not long enough to gather a large sample size, whereas supporting literature collected data for longer periods up to six months post-partum. Missed opportunities occurred due to the busyness of the clinic, increased workload of providers, and the project coordinator's inability to be in the clinic daily for optimal recruitment of participants.

Sample characteristics were as anticipated by the project coordinator including a population of completely female (100%) participants 18 years of age and older presenting to a pediatric office during the postpartum period. The majority of participants made less than \$25,000 (76.7%) annually, which is below the median household income in northeast, Indiana (United States Census Bureau, 2018). Although the relationship between socioeconomic status and risk for PPD (EPDS scores) did not demonstrate significance in this project, evidence supports that those who earn less than \$2,000 (\$24,000/year) a month are at a higher risk for PPD (Sorgi, Coddington, Ahmed & Richards, 2019). Research also supports that postpartum women of low socioeconomic status are more likely to screen at high risk for PPD (Leis et al., 2014; Friedman, Rochelson, Fallar & Mogilner, 2016). Demographic characteristics of participants from this project are consistent with the literature, indicating that participants who scored at high-risk for PPD (EPDS total score ≥ 10) earned less than \$25,000 annually. Furthermore, another known contributor to socioeconomic status is educational level. Within this project, participant's annual income correlated with their educational level. The majority of participants graduated with a high school diploma (56.7%) while only 43.3% either attended college or had a college degree. There was no relationship identified between education, or lack thereof, to EPDS total scores.

There were three main ethnicities represented within the project, African American (23.3%), Caucasian (60%) and Hispanic (16.7%). For this pediatric clinic, the project's diverse sample was a good representation of the population frequenting the office for routine care. The

diverse ethnic backgrounds of the participants ($N = 30$) did not demonstrate a significant difference in their risk for PPD. Although a relationship between the project participants' ethnicity and PPD was not found, researchers have reported that Hispanics are more likely to have positive PPD screenings (Sorgi, Coddington, Ahmed & Richards, 2019). Mothers participating in this study were recruited during well-child visits ranging from 1 month to 6 months old, with the majority captured at the 2-month (33.3%) appointments. While there was no significant difference between the infant's age and their mother's EPDS scores in this project, Kurtz, Levine and Safyer (2017) discuss how the mother-infant relationship is impacted depending on the severity of the mothers' symptoms. Other researchers have reported that mothers are more likely to screen positive for PPD at older well-child visits (i.e. 6 months) appointments rather than younger well-child appointments (i.e. 2 months and 4 months) (Emerson, Matthews & Struwe, 2018). On the contrary Sorg, Coddington, Ahmed and Richards (2019) found that mothers who were screened at 1-month well-child appointments were at higher risk for PPD than at 2- and 4-month appointments. Consequently, screening for PPD throughout the infant's entire first year of life increases the probabilities of identifying positive (EPDS total score ≥ 10) EPDS scores.

Lastly, each participant in this project identified whether they have had any past or current history of a mental health condition. There was a total of 12 (40%) participants that identified having a positive history of a mental illness. Within this sample subset, half expressed having multiple mental illnesses including depression, postpartum depression and/or an anxiety disorder. Kurtz, Levine and Safyer (2017) suggest that those suffering from mental illnesses have a higher chance of screening positive for PPD than those without, which can negatively impact the infant's health. Within this project, there was a significant association between a reported history of mental illness and high-risk EPDS total scores. Thus, screening women who have a past medical history of a mental health disorder for PPD during the postpartum period is of the utmost importance.

EPDS scores & follow up

During the implementation process of the project, participants were screened for their risk for PPD during their infant's well-child visits and received a 12-week follow-up phone call for re-screening by the project coordinator following the intervention. Five participants met the criteria outlined within the EPDS screening tool (EPDS total score ≥ 10) for referral to their OB/GYN or PCP based on their initial screening results. During this 12-week implementation process, the project coordinator evaluated participants EPDS total scores pre-intervention, compliance of referral and post-intervention EPDS total scores. There was a significant difference between the initial pre-intervention EPDS scores, and post-intervention participant follow up with OB/GYN or PCP. The relationship between initial pre-intervention EPDS total scores and post-intervention follow up with an OB/GYN or PCP indicates that those that needed to follow up with their providers did so with success. Although there was a significant difference between the pre-intervention EPDS scores and follow-up, there was not a significant difference between post-intervention EPDS scores and follow up. These findings indicate that participants that followed up with their OB/GYN or PCP did not have an impact on their post-intervention EPDS scores. Though there was not a significant difference, each participant ($n = 5$) that screened positive on the pre-intervention screening, screened lower than their initial score on the 12-week follow-up.

Pre- & Post-Intervention EPDS scores

The primary outcome of this project was to determine if screening for PPD within a pediatric setting is effective at identifying at-risk mothers during well-child visits. The paired samples *t*-test indicated that there was a significant decrease ($p < .001$) in EPDS scores from pre-intervention to post-intervention. The mean of the pre-intervention EPDS score was 4.83 while the mean of the post-intervention EPDS score was 2.40, which is a difference of 2.43. These results imply that participants scored lower on their post-intervention screening than their initial pre-intervention screening (Table 4.2) After participants received PPD educational

information, discussion with their child's pediatric provider about PPD and their risk for the condition, follow-up with their OB/GYN or PCP, and a follow-up phone call with project coordinator occurred. These interventions likely increased the management of their PPD risk which was reflected in their 12-week post-intervention EPDS total scores. At the 12-week post-intervention follow-up, 23.3% of participants verbalized the use of medication to help manage PPD.

Strengths and Limitations of the DNP Project

Overall, the main objectives of this EBP project and successful implementation of the planned interventions were accomplished. Although there were a variety of strengths noted throughout this project there were also some limitations identified. Identifying and addressing each strength and limitation aides in the facilitation of best practice in the identification and management of postpartum depression.

Strengths

A strength of the project was the follow-up protocol set in place for participants who scored positive (EPDS total score ≥ 10) on the EPDS screening tool. There was a 2-week follow-up phone call conducted by the project coordinator for those who scored positive to ensure they received the necessary support and management for their level of PPD risk. This follow-up phone call allowed participants the opportunity to provide feedback about the screening process and provide data post-intervention to calculate their PPD risk. Another strength identified during project analysis included the benefit of providing PPD education and resources to participants. Educational and resource materials administered during project implementation heightened participant awareness of PPD and their potential risk for the condition, especially because many of the participants were not screened prior to the visit to their pediatrician's office. Engaging participants with a list of supportive local resources for PPD ensured that they had the information necessary to seek assistance and medical intervention if desired. These resources included free counseling centers and low cost/ noninsured centers for

the public. These resources provided the participants with an alternative to visiting their OB/GYN or PCP, which could essentially reduce costs for treatment or therapy and be more convenient for participants to utilize. Utilizing the ACE Star Model was a great strength for this project by providing guidance for the development, implementation and evaluation of the project. Applying the five different stages of knowledge transformation into the project implementation, made transitioning research into practice at the project site practicable. Moreover, the uniqueness of the model helped create new knowledge within the project site for providers and participants.

Limitations

A small sample size was identified as a limitation to this project which resulted from the recommended participant population by the AAP as well as the site facilitator's time constraints for recruitment and implementation. The intervention timeframe limited the sample size due to the short amount of time to gather information, whereas AAP recommends participants being screened during all of the well-child visits within the first year of an infant's life. Participants were recruited when presenting to the clinical setting for their child's well-child visit during the postpartum period. Project recruitment was low due to a turnover in staff at the clinic site causing an increased emphasis on training new staff and reduced efforts at promoting the project. Recruitment of participants and implementation of the project interventions were best facilitated when the project coordinator was present in the clinic setting during two days each week and responsible for these activities. However, it was not feasible for the project manager to be present in the clinic on a daily basis and therefore it is likely that the recruitment efforts were not adhered to as well by healthcare providers during the project coordinator absence. Because providers were busy during the project implementation timeframe, it is likely that some potential participants were missed on the days that they were responsible for recruiting participants. The sample size was also limited by excluding adolescent mothers younger than 18 years of age and fathers of infants. Finally, the follow-up and recording of mother EPDS scores within the

EMR of their child at the clinic site by the providers was not completed as planned. The lack of compliance by the healthcare providers in documenting this information may be attributed to the overall large volume of patients encountered on a typical day and limited time for visits.

Furthermore, a new EMR system was launched simultaneously with project implementation further complicating this process. As a result, the MAs provided PPD education and community resources information to the participants and informed the healthcare providers verbally of the mother's EPDS total score prior to the well-child visit. This lack of formalized process for documenting mother's EPDS total score had weaknesses which can contribute to human error. The reporting MA could notify the healthcare provider of the wrong results, provide the results to a different participant or interpret the results incorrectly. This can be improved by utilizing a completely electronic process including the EPDS screening tool being in electronic format that automatically inputs data and scores into the well-child visit chart. This can help eliminate human error and provide a more accurate result.

Implications for the Future

The *You're Not Forgotten* project provided prodigious information for APRN profession in relation to screening mothers at risk for PPD within a pediatric setting. Future implications for practice, theory, research and education will be explored here. These implications can be used to guide future EBP projects as well as address the stigma associated with depression and mental health disorders among our society.

Practice

Current high-quality literature suggests that screening mothers for PPD within a pediatric setting is best practice. Although it is expressed to be best practice, unfortunately many pediatric offices are not implementing this practice. This project allowed for PPD screening to become a part of the standardized practice at the project site in hopes that this could provide support for all pediatric offices to adopt this protocol. The project intervention was very feasible and cost-effective for the pediatric site. There was no expense to the pediatric office in regard to

the postpartum depression screening tool since the project coordinator covered all printing finances. Therefore, additional planning would be necessary to determine how patients will have access to the screening tool and whether an electronic or paper format would be considered for future practice. Potential options for EPDS screening at the project site in the near future that providers at this setting have discussed include an electronic version of the screening tool with pre-existing tablets utilized by the office for patients and/or the printing of a free version of the screening tool from online resources. The electronic version of the screening tool will go directly in the infant's chart, while a paper form will be scanned into the chart and the actual form destroyed. Sustainability is being considered for an electronic version, which will be completed during well-child visits up to 12 months and recorded by the mother on tablets located in exam rooms.

For future EBP projects related to PPD screening within a pediatric setting, larger participant sizes, longer implementation times, and more detailed follow-up on the referral process for mothers at risk would be beneficial. Additional recommendations for future projects include following participants consistently throughout the project at multiple intervals over a longer course of time. This would aide in the ability to properly track participants over a 6-month period with each well-child visit to ensure effectiveness of screening within a pediatric setting.

Theory

The ACE Star Model was determined to be a good fit for this EBP project. Although the project coordinator was a novice at implementing new knowledge/protocols within a practice, the five stages of the ACE Star Model aided in the guidance of achieving successful practice changes by helping overcome challenges that accompany change. The ACE Star Model encompasses five stages: discovery research, evidence summary, translation to guidelines, practice integration and process, and outcome evaluation (Melnik & Fineout-Overholt, 2015). Each stage was utilized and relevant to the project development, implementation and evaluation. The foundation of the EBP project was essentially formed using the discovery

research stage, by inquiring what practice change was needed and to conduct a literature search. Recently having experienced childbirth and caring for an infant, the project coordinator realized screening for PPD was commonly only performed at the 6-weeks follow up postpartum visit with an OB/GYN. After questioning what happens to mothers who have PPD symptoms well after 6 weeks postpartum and pondering if anyone would notice, the project coordinator found strong evidence supporting the need for a change. Upon further investigation on the topic a lack of awareness and follow-up/referrals was also noted to be a problem. Evidence was reviewed during the evidence summary stage of the model, which indicated good and high quality/levels of evidence to support the project. During these stages as well as the translation to guidelines stage, the project coordinator determined how to properly utilize the supporting evidence in a beneficial manner manager for patient outcomes.

There were modifications that occurred during the practice integration and change process of the ACE Star Model. For example, the project coordinator initially wanted screening to be done electronically to reduce the chance of error, but the project site was unable to account for electronically screening participants. It was originally planned for the participants to use a tablet to complete the EPDS screening and the score was to automatically translate to their child's EMR. Due to the EMR system changes prior to implementation accommodations to utilize the paper form were made. Another modification that occurred during the practice integration phase of the project was the utilization of the secretarial staff to recruit eligible participants rather than the healthcare providers as initially planned. This modification benefited the project by reducing missed opportunities. Having the secretarial staff provided the screenings, aided in the reduction of missed opportunities but did not eliminate missed opportunities. The secretarial staff deem to be more suitable to provide the PPD screening along with other office paperwork.

During the evaluation stage of the ACE Star Model it was very helpful to revisit the goals of the project and adoption of the practice protocol. Overall, the project was implemented with

minimal modifications while still achieving the outcomes desired. After completion of the implemented protocol, adoption of the project was discussed with the project site facilitator. As a result, strategies for incorporating the EPDS screening tool within the EMR are being considered. In congruency with the guidelines provided by AAP, it was discussed that the best way to adopt this protocol would be to screen participants at well-child visits up to a year of the infant's life and provide participants with PPD education and community resources. Resources will be provided to participants based on the provider's discretion. Future plans may include all parents (male or female) included in the screening during well-child visits at all pediatric facilities. Future research is needed for screening protocols for the lesbian, gay, bisexual, transgender and queer (LGBTQ) community and other legal guardians' situations (i.e. adoption and fostering). Considerations for future implementations at the pediatric project site include strengthening OB/GYN and pediatrician relationships.

Research

Further research is needed to explore the effects of screening for PPD in a pediatric setting in comparison to standard practice of screening in an OB/GYN or PCP office. It may be that screening for PPD in a pediatric setting identifies more at-risk mothers during the postpartum period in comparison to screening in an OB/GYN or PCP office. However, screening for PPD in an OB/GYN or PCP office is useful in reducing barriers associated with receiving treatment such as the lack of an available therapist, public treatment options, time constraints and patient reluctance. Thus, screening for PPD within a pediatric setting is beneficial for those who may not follow up with their OB/GYN or PCP postpartum and may be potentially missed. Screening in pediatric offices does not have to replace OB/GYN or PCP screenings but rather enhance encounters for screening PPD in general. If screenings are positive (EPDS total score ≥ 10) in a pediatric setting recommendation for referrals to an OB/GYN or PCP are enforced.

Education

Patient education is an essential role of the advanced practice registered nurse. Educating participants about the best practices, signs and symptoms of PPD, purpose of screening and available community resources was incorporated into the implemented protocol within this project. Education was the main focus on the PPD information which was provided for all participants, to ensure they were informed about PPD and its consequences. Participants expressed an increase of knowledge about PPD and great use of the reliable community resources. With the information the participants received, they expressed that it allowed them to be well-informed of their options available for assistance and support. Provider education is important regarding treatment and management of PPD. For instance, providers can shine some light on how to manage or provide different coping techniques for PPD. This project helped providers familiarize themselves with community resources, educate participants, and support and assisting participants with their individual needs. Implications for further research can include the impact of mother's mental health effects on the mother-infant dyad. Research is needed to further educate providers regarding the benefits of screening women during the postpartum period at well-child visits in relations to child development.

Conclusion

The *You're Not Forgotten* project has enhanced the site facilitator, staff, and project participants understanding of the value of screening for PPD within a pediatric setting. The site facilitator expressed satisfaction with the project's impact on the clinic and a desire to continue to screen mothers for PPD at this practice. Methods for sustainability are underway at the project site with possible incorporation into the new EMR system with appropriate staff training. The project facilitator was receptive to continued use of educational information aids including the use of the EPDS screening tool to disperse to eligible patients. The project site facilitator plans to follow the guidelines of the AAP and provide PPD screening to eligible mothers with a referral protocol for individuals who are at higher risk. During the 12-week post-intervention

phone call, participants also expressed their satisfaction of being screened for PPD in a pediatric setting, while many did not follow up with their own OB/GYN or PCP.

In conclusion, results of this project support the effectiveness of screening mothers for PPD in a pediatric setting and are consistent with the current literature. There was a significant difference in PPD risk scores from participants who were screened pre-intervention and re-screened post-intervention. While there was no statistical significance on the demographic characteristics and EPDS scores within this project, larger sample studies have supported that those who suffer from any mental illness have a higher risk of screening positive for PPD.

Patient education and appropriate referral protocol procedures are an essential component for best practice protocols which should be in place to ensure patients are receiving the proper treatment needed. Hence, this project has initiated a patient-centered practice change that will continue to positively impact the mother-infant dyad. It is recommended that providers incorporate this screening process within their practices to help individuals who are at high risk for depression to have access to medical information and treatment.

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BIOGRAPHICAL MATERIAL

Mrs. Culver graduated from Indiana State University with a Bachelor of Science in Nursing (BSN) in 2013. She worked at a local hospital in Merrillville, IN for four years as a registered nurse on the intermediate care unit (IMCU). Since 2017, she has been working as a registered nurse on the postpartum women and children's unit at a local hospital in Fort Wayne, IN. She decided to attend Valparaiso University to pursue her Doctor of Nursing Practice (DNP) in 2016, which she will complete in May 2020. She is an active member of several campus and professional organizations, including the Zeta Epsilon Chapter of Sigma Theta Tau International Honor Society of Nursing, Society of Nurses in Advanced Practice (SNAP), NP-PA Unite Inc., and the Coalition of Advanced Practice Nurses of Indiana (CAPNI). Mrs. Culver was graced with the Herbert H. Gerke Scholarship from Valparaiso University in 2017, 2018 & 2019. Also, in 2019, she was the recipient of the CVS Health Foundation Advanced Practice Nurse Scholarship. Throughout her years of nursing practice, she has been frequently commended by patients and coworkers for her hard work and dedication to patient care. Her decision to implement an evidence-based practice (EBP) project centered on postpartum depression screening within a pediatric setting stemmed from her desire to give patients, family members, and friends a better way to cope with depression and to know they are not alone. Furthermore, she hopes this EBP project will help decrease the stigma associated with depression within the United States. She has had the opportunity to present her EBP project at the 2020 CAPNI Annual Advanced Practice Registered Nursing Conference in Indianapolis, IN. Some of her interests as a future family nurse practitioner includes women's health, family practice, dermatology and nursing education. Mrs. Culver will continue to aim to make positive contributions to the nursing profession in honor of her family and in hopes that by doing so, it will enhance the lives of others.

ACRONYM LIST

AAP: American Academy of Pediatrics

ACE: Academic Center for Evidence-Based Practice

ANA: American Nurses Association

ANOVA: Analysis of Variance

APA: American Psychological Association

APRN: Advanced Practice Registered Nurse

AWHONN: Association of Women's Health, Obstetric and Neonatal Nurses

CDC: Centers for Disease Control and Prevention

CINAHL: Cumulative Index to Nursing and Allied Health Literature

CITI: Collaboration Institutional Training Initiative

CMS: Centers for Medicare and Medicaid Services

DNP: Doctor of Nursing Practice

EBP: Evidence-Based Practice

EMR: Electronic Medical Record

EPDS: Edinburg Postnatal Depression Scale

FQHC: Federally Qualified Health Care Center

GRADE: Grading of Recommendation Assessment Development & Evaluation

HSD: Honestly Significant Difference

IRB: Institutional Review Board

JB: Joanna Briggs Institute

JHNEBP: John Hopkins Nursing Evidence-based Practice

LGBTQ: Lesbian, gay, bisexual, transgender and queer

MA: Medical Assistant

MD: Medical Doctor

MeSH: Medical Subject Headings

NAPNAP: National Association of Pediatric Nurse Practitioners

NP: Nurse Practitioner

OB: Obstetrician

OB/GYN: Obstetrician/Gynecologist

PA: Physician Assistant

PCP: Primary Care Provider

PDSA: Plan-Do-Study-Act

PHQ: Personal Health Questionnaire

PMADs: Postpartum mood and anxiety depressive disorders

PND: Prenatal Depression

PPD: Postpartum Depression

SD: Standard Deviation

SDBP: Society for Developmental and Behavior Pediatrics

SPSS: Statistical Package for Social Sciences

USPSTF: United States Preventive Services Task Force

WCC: Well Child Checks

WCV: Well-Child Visits

Appendix A

Appraisal of Evidence Table

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Association of Women's Health, Obstetric and Neonatal Nurses [AWHONN]. (2015). Mood and anxiety disorders in pregnant and postpartum women <i>JOGNN - Journal of Obstetric, Gynecologic, and Neonatal Nursing</i> , 44(5), 687-689.	Guidelines for providers to screen and treat perinatal psychiatric distress in facilities that serve pregnant women, new mothers, and newborns.	Clinical guideline/ Position statement	Pregnant and postpartum women	Recommendation for measuring mood and anxiety disorders within different settings.	Recommended to use a screening tool to measure postpartum depression for postpartum mothers to identify risk of postpartum depression. Facilities caring for pregnant and postpartum women should have policies in place to care for these disorders.	Level IV/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Emerson, M. R., Mathews, T. L., & Struwe, L. (2018). Postpartum depression screening for new mothers at well child visits. <i>MCN: The American Journal of Maternal Child Nursing</i> , 43(3), 139–145.	Determine prevalence of mothers who scored in the at-risk range using Edinburgh Postnatal Depression Scale (EPDS) at each of the 2, 4, and 6 month well child visits (WCV). Examine feasibility factors relative to extending the current standard of care for PPD screening. Examine visit documentation for at-risk mothers	Prospective cohort	Perinatal women/postpartum women attending their infants' 6 month well child visit in a pediatric outpatient practice.	Measuring PPD at 2, 4 and 6 month WCVs, using the EPDS.	43 women were included, 10% for 2 month visit, 12.5% for 4 month visit & 14% for 6 month visit. Prevalence of PPD among participants is consistent with previously reported rates. Identified Improvements for clinical practice include: (a) content of visit that is documented in medical record (b) review screening results with mothers at risk (c) time for clinical team to conduct screening and (d) appropriate referral to outside sources.	Level I/ High (A)quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Friedman, S., Rochelson, E., Fallar, R., & Mogilner, L. (2016). Postpartum depression in a general pediatric practice. <i>Clinical Pediatrics</i> , 55(9), 793–799.	The effects of an educational session about PPD and modification of the electronic medical record (EMR) on providers' screening for PPD.	Quasi-experimental study	Postpartum women	Educational session provided for the physicians and a pre and post surveys completed comparing comfort and self-reported screening. EMR educational changes in 3 groups: group 1- before the conference, group 2-after the conference but before EMR change and group 3- after screening in the EMR.	Documented screening increased from 0% in group 1, to 2% in group 2, to 74% in group 3 ($p < .001$). 10% screened positive but only 14% had documented referrals to a provider for treatment. The combination of provider education and screening questions integrated into the EMR enhanced PPD screening rates in a pediatric busy practice.	Level II/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Gilbert, A. L., Balio, C., & Bauer, N. S. (2017). Making the legal and ethical case for universal screening for postpartum mood and anxiety disorders in pediatric primary care. <i>Current Problems in Pediatric & Adolescent Health Care</i> , 47(10), 267–277.	Provide information regarding universal screening for PPD using validated tools in pediatric primary care settings for new caregivers by making the legal and ethical case for this course of action in a manner that is both compelling and accessible for clinicians.	Nonexperimental study (literature review)	Postpartum women	Assessment of literature as it applies to provider responsibilities, liabilities and perspectives, and caregiver autonomy, confidentiality and privacy. The assessment of the balancing benefits across multiple populations.	There is a strong ethical and legal case for universal screening for PPD and postpartum mood and anxiety disorders (PMADs) in a pediatric primary care setting using validated tools when informed consent can be obtained and appropriate follow-up services are available and accessible.	Level V/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Gyi, Aye. (2018). Postpartum depression: Assessment [Recommended practice]. Retrieved from Joann Briggs Institute EBP Resources website http://joannabriggslibrary.org/ .	Details about the best available evidence regarding assessment for postpartum depression.	Evidence summary	Postpartum women	Recommendation for the use of Edinburg Postnatal Depression Scale (EPDS) in all clinical settings involved in care for postpartum women.	Recommendation for all healthcare professionals involved in the care of postpartum women to utilize a screening tool (EPDS) to measure postpartum depression. Recommendation on evaluation of screening tools and recommendation on referral process for positive screenings.	Level V/ High (A) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Kurtz, S., Levine, J., & Safyer, M. (2017). Ask the question: Screening for postpartum mood and anxiety disorders in pediatric primary care. <i>Current Problems in Pediatric & Adolescent Health Care</i> , 47(10), 241–253	Addressing the concerns of implementing postpartum screening within a pediatric primary care setting.	Literature review	Postpartum women	Identifying the type of postpartum mood and anxiety disorders in order to properly develop a plan for screening in a pediatric setting. Using a Plan-Do-Study-Act (PDSA) cycle to implement screening for postpartum depression in a pediatric setting. Using EPDS and PHQ-2 and PHQ-9 to identify risk of postpartum depression and other mood disorders.	Using this model, proper implementation of a screening process in a pediatric setting is applicable.	Level V/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Leis, J. A., Solomon, B. S., Wasserman, K. E., Carter, T. N., Mendelson, T., Perry, D. F., & Tandon, S. D. (2015). Preventing postpartum depression in a pediatric primary care clinic: A pilot study. <i>Clinical Pediatrics</i> , 54(5), 487–490.	Integrate an evidence-based preventive intervention for perinatal depression into a pediatric primary care clinic serving low income, minority families, and to explore intervention acceptability and preliminary outcomes.	Pilot study	Postpartum women who were identified to have depressive symptoms on the U.S. Preventive Services Task Force (USPSTF) 2-item depression screener during newborn, 2- and 4-month well-baby visits. An urban, academic pediatric primary care clinic serving predominately low-income families.	Two cohorts of mothers completed a Mothers and Babies (MB) course (6 weekly, 2 hour sessions which are divided into 3 modules)	Total of 15 women participated; 5 in which attended 0 or 1 session, while 10 women attended 4 or more sessions/ the mean number of sessions attended by completers was 5.3 indicating excellent engagement in the intervention. The results from this study support pediatric primary care as an promising setting to implement maternal mental health intervention.	Level II/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Mgonja, S., & Schoening, A. (2017). Postpartum depression screening at well-child appointments: A quality improvement project. <i>Journal of Pediatric Healthcare</i> , 31(2), 178–183.	To implement and evaluate a postpartum depression program using Edinburgh Postnatal Depression Scale (EPDS) during well child appointments up to 1 year in a pediatric primary care setting.	Quality Improvement project	Postpartum women ages 19 years and older at their infants' well-child appointments at a faith-based clinic in the Midwest.	Using the Plan-Do-Study-Act framework, the EPDS was administered to mothers at well child appointments up to 1 year of age.. Score of 10 or greater was considered positive and evaluated every 2 weeks.	Total of 35 (97.3%) mothers completed the EPDS tool during 9 week implantation periods. Staff compliance rate with administering EPDS was 78.7% there were 10 missed opportunities (21.3%) There were 5 positive EPDS results (14.3%).	Level V/ High (A) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Olin, S. S., McCord, M., Stein, R. E. K., Kerker, B. D., Weiss, D., Hoagwood, K. E., & Horwitz, S. M. (2017). Beyond screening: A stepped care pathway for managing postpartum depression in pediatric settings. <i>Journal of Women's Health, 26</i> (9), 966–975.	Provide a stepped care approach for screening and managing PD, integrating common elements found in existing pediatric-based models.	Literature Review	Postpartum women	Care pathway begins with systematic screening for depression symptoms, followed by a systematic risk assessment for women who screen positive and care management based on risk profiles and responsiveness. A four step process included: screening for depressive symptoms, psychosocial risk assessment to triage care, care management based on risk profile & follow-up and monitoring PD.	The importance of a pediatric setting is critical to both maternal and child well-being, recommendations follow the USPTF of screening for PPD in a pediatric setting. The proposed pathway provides a testable model for an important public health concern and can be implemented within a pediatric setting to improve child well-being.	Level V/ Good (B) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Puryear, L. J., Nong, Y. H., Correa, N. P., Cox, K., & Greeley, C. S. (2019). Outcomes of implementing routine screening and referrals for perinatal mood disorders in an integrated multi-site pediatric and obstetric setting. <i>Maternal and Child Health Journal</i> . 10(23), 1292-1298.	Increase access to perinatal mental health services through universal screening for postpartum depression and facilitating referrals for evaluation and treatment at a pediatric practice	Quality improvement project	Pregnant and postpartum women at a Texas Children's Hospital in Houston, Texas	Pediatric practice screened women at 2 weeks, 2, 4, and 6 month well baby visits, using the EPDS screening tool and recorded in the electronic medical record.	Total of 102,906 screens for PPD were completed, 6,487 (6.3%) screened positive, 3,893 (3.8%) were referred; of those referred, 2,172 (55.8%) completed appointment with a mental health provider. Concluding that PPD screening can be integrated into a pediatric setting.	Level V/ High (A) quality
Rafferty, J., Mattson, G., Earls, M. F., & Yogman, M. W. (2019). Incorporating recognition and management of perinatal depression into pediatric practice. <i>Pediatrics, American Academy of Pediatrics</i> , 143(1), 1–29.	Guidelines for improving the health of all children. Guideline for providers to utilize to identify postpartum depression in postpartum women.	Clinical guideline	Postpartum women	Postpartum depression measurement within a pediatric setting and follow up. Impact PND have on infant and family dyad.	Recommended to use postpartum depression screening tool, within a pediatric setting at different visits (1- 2-, 4-, , 6 months) to evaluate postpartum depression.	Level IV/ High (A) quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Sorg, M., Coddington, J., Ahmed, A., & Richards, E. (2019). Improving Postpartum Depression Screening in Pediatric Primary Care: A Quality Improvement Project. <i>Journal of Pediatric Nursing</i> , 46, 83–88.	To improve standardized screening for postpartum depression in a pediatric primary care setting	Quality Improvement	Postpartum women	Implementing a standardized postpartum depression screening tool into a pediatric primary care practice, independent samples t-test and logistic regression were used for data analysis.	Postpartum depression screening practice improved from 83% to 88% (p=0.096) [not high statistically] Concluded that pediatric health care providers can effectively screen for postpartum depression.	Level V/ Good (B)quality
Van der Zee-van den Berg,A.,Boere-Boonekamp,M., IJzerman, M., Haasnoot-Smallegange,R., & Reijneveld, S. (2017). Screening for postpartum depression in well-baby care settings: A systematic review. <i>Matern Child Health</i> ,21, 9-20	Evaluating the evidence of the effectiveness of screening for PPD in WBC settings regarding mother and child outcomes.	Systematic Review	Postpartum women	Postpartum depression measurement within a pediatric setting using EPDS screening tool (4 studies).	Mothers being screened in a pediatric setting occurred in all studies with referral.	Level II / High (A)quality

Citation (APA)	Purpose	Design	Sample	Measurement/ Outcomes	Results/Findings	Level/ Quality
Waldrop, J., Ledford, A., Perry, L. C., & Beeber, L. S. (2018). Developing a postpartum depression screening and referral procedure in pediatric primary care. <i>Journal of Pediatric Healthcare</i> , 32(3), e67–e73.	Appraisal of the current evidence on implementing screening for postpartum depression in a pediatric primary care.	Systematic Review	Postpartum women	Utilizing a support algorithm for screening and follow-up and process of developing an accompanying referral/resource list.	The evidence supports the use of a clinical decision support algorithm and the need for having local resources an referrals available at the point of care. Screenings within the pediatric setting is feasible an can be adapted in a local setting.	Level III/ High (A) quality

*Appendix B**CITI Program*

This is to certify that:

Marrisa Culver

Has completed the following CITI Program course:

Researchers (RCR) (Curriculum Group)
Researchers (RCR) (Course Learner Group)
1 - BASIC (Stage)

Under requirements set by:

Valparaiso University

Completion Date 18-Apr-2019
Expiration Date N/A
Record ID 31336027

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w2b81621e-7138-43bf-9613-c5d95068c404-31336027



Completion Date 18-Apr-2019
Expiration Date 17-Apr-2022
Record ID 31336026

This is to certify that:

Marrisa Culver

Has completed the following CITI Program course:

Public Health Researchers (Curriculum Group)
Public Health Researchers (Course Learner Group)
1 - Basic (Stage)

Under requirements set by:

Valparaiso University



Verify at www.citiprogram.org/verify/?wb76b39d4-2698-4e3f-ad4d-c207e3c8a2ce-31336026



Completion Date 18-Apr-2019
Expiration Date N/A
Record ID 31336025

This is to certify that:

Marrisa Culver

Has completed the following CITI Program course:

Group 1: Social Behavioral Educational Researchers (Curriculum Group)

Group 1: Social Behavioral Educational Researchers (Course Learner Group)

1 - Basic Course

(Stage)

Under requirements set by:

Valparaiso University



Verify at www.citiprogram.org/verify/?w02d564a3-ac82-4e80-8026-d440382b3ad6-31336025

Appendix C

JHNEBP Model Permission

	LEARNING SYSTEM HOME	COURSE CATALOG	CONTACT US	JOIN OUR MAILING LIST	IJHN WEBSITE	
Home » JHNEBP Model and Tools- Permission						

JHNEBP MODEL AND TOOLS- PERMISSION



Thank you for your submission. We are happy to give you permission to use the JHNEBP model and tools in adherence of our legal terms noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.
- All reference to source forms should include "©The Johns Hopkins Hospital/The Johns Hopkins University."
- The tools may not be used for commercial purposes without special permission.

If interested in commercial use or discussing changes to the tool, please email ijhn@jhmi.edu.

Appendix D

Patient Consent and Authorization Form

Date: _____

Identification #: _____

PATIENT CONSENT AND AUTHORIZATION FORM

Project Title: You're Not Forgotten: The Effects of Screening Postpartum Depression in a Pediatric Setting

Project Coordinator: Marrisa Culver, BSN, RN, DNP Student, Valparaiso University College of Nursing

Purpose: I, _____ (please print), understand that I am being asked to participate in an educational intervention project for postpartum mothers which will screen for postpartum depression in a pediatric setting.

Procedure: The project coordinator will provide the following: an Edinburgh Postnatal Depression Screening tool (English or Spanish) during well child visits. The screening tool used is recommended by the American Academy of Pediatrics and the United States Preventive Services Task Force.

Risk: There are no known physical risks to participate in this project. There are no invasive techniques or procedures used. This project is designed to increase knowledge and awareness of postpartum depression and to identify postpartum depression within a pediatric setting. The project involves collection of information from participants prior to seeing the physician, based on the score, educational information may be provided or possibly referral to obstetric (OB) doctor or primary care provider (PCP).

Benefits: Identifying postpartum depression can decrease its effects on mother and baby. The knowledge gained from this project could provide valuable information regarding postpartum depression and its screening in a pediatric setting for health care providers, educators and health organizations. The program could possibly minimize missed opportunities for screenings.

Payment for participation: I understand that I will not be paid for my participation in this project. I may receive free educational brochures and community resources.

Additional Cost: I understand there will be no cost for me to participate in this project.

Voluntary Participation/Withdrawal: I understand that my participation in this project is my choice and I am free to stop at any time without penalty.

Questions: If I have any questions about my participation in the project or in the future, Marrisa Culver may be contacted at 219-895-8650 or through her email address at marrisa.culver@valpo.edu. If you have questions about my rights as a project participant, Rasha Abed, Associate Director of the Institutional Review Board at Valparaiso University, may be contacted at (219) 464-5798.

Confidentiality/Anonymity: Although information that I will give on the screening tool (questionnaire) may be used and reported by the project coordinator, my name and facts that

would identify me will be kept strictly confidential. I have been assured of my anonymity I the reporting of data.

Consent to Participant in Project Study: I have read or had read to me all of the above information about this project, the procedure, possible risk, and potential benefits and I understand them. All of my questions have been answered. I give consent and permission freely to participate in this project.

Participants Signature

Date

Project Coordinator's Signature

Date

Appendix E

Personal Data Form

PERSONAL DATA FORM

Name: _____

Baby DOB or age?: _____

Mother Race: _____

Mother yearly income level (circle one that applies): less than \$25,000 \$25,000-\$49,999
 \$50,000-\$74,999 \$75,000+

Highest educational level achieved (circle one that applies): Elementary High School Some
 College College Graduate Graduate School

Past medical history of (circle all that apply): depression, post-partum depression, anxiety, mood
 disorders, other _____

Current under treatment for depression or other psychological disorder? Yes or No If Yes,
 explain _____

Follow up with OB provider since delivery? Yes or No Identify how many weeks postpartum.

Personal Contact Information:

Ph: _____

Email: _____

Primary Care Provider or Obstetric (OB) Provider Contact Information:

Name: _____

Phone: _____

Provider seeing today: MD

PA

NP

I, _____ give permission to the project coordinator
 and/or healthcare provider to contact my provider regarding the results of my screening.
 If the results of my screening indicate a high risk for depression, I give my permission for the
 project coordinator to contact me within 2 weeks of my visit via telephone to follow-up on my
 symptoms. YES or NO

Signature: _____ Date: _____

Appendix F

Edinburgh Postnatal Depression Screening Tool

Name:
Date:
Address:
Baby's Age:

As you have recently had a baby, we would like to know how you are feeling. Please UNDERLINE the answer which comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

Here is an example, already completed.

I have felt happy:
Yes, all the time
Yes, most of the time
No, not very often
No, not at all

This would mean: "I have felt happy most of the time" during the past week. Please complete the other questions in the same way.

In the past 7 days:

- | | |
|--|---|
| <p>1. I have been able to laugh and see the funny side of things
As much as I always could
Not quite so much now
Definitely not so much now
Not at all</p> | <p>*6. Things have been getting on top of me
Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped quite well
No, have been coping as well as ever</p> |
| <p>2. I have looked forward with enjoyment to things
As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all</p> | <p>*7. I have been so unhappy that I have had difficulty sleeping
Yes, most of the time
Yes, sometimes
Not very often
No, not at all</p> |
| <p>*3. I have blamed myself unnecessarily when things went wrong
Yes, most of the time
Yes, some of the time
Not very often
No, never</p> | <p>*8. I have felt sad or miserable
Yes, most of the time
Yes, quite often
Not very often
No, not at all</p> |
| <p>4. I have been anxious or worried for no good reason
No, not at all
Hardly ever
Yes, sometimes
Yes, very often</p> | <p>*9. I have been so unhappy that I have been crying
Yes, most of the time
Yes, quite often
Only occasionally
No, never</p> |
| <p>*5. I have felt scared or panicky for no very good reason
Yes, quite a lot
Yes, sometimes
No, not much
No, not at all</p> | <p>*10. The thought of harming myself has occurred to me
Yes, quite often
Sometimes
Hardly ever
Never</p> |

EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)
J. L. Cox, J.M. Holden, R. Sagovsky
From: *British Journal of Psychiatry* (1987), 150, 782-786.

Appendix G

Community Resource Listing

Fort Wayne Community Resource Listing	
Name	Contact Information
Mental Health America of Northeast Indiana	1027 W. Rudisill Blvd. Fort Wayne, IN 46807 (260) 422-6441
Cross Connections Inc.	4618 East State Blvd. Suite 300 Fort Wayne, IN 46815 (260) 373-0213
The Peggy F. Murphy Community Grief Center	5920 Homestead Rd. Fort Wayne, IN 46814 (260) 435-3261 or toll-free (800) 288-4111
Park Center Walk-in Clinic	2710 Lake Ave. Fort Wayne, IN 46805 (260) 471-9440 or (260) 969-8440
Suicide National Hotline	(800) 273-8255
Park Center	(260) 481-2700 or (866) 481-2700
Parkview Behavioral Health	(260) 373-7500 or (800) 284-8439